

New distributional records from forgotten Banda Sea islands: the birds of Babar, Romang, Sermata, Leti and Kisar, Maluku, Indonesia

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Received 5 July 2011; final revision accepted 10 September 2013

SUMMARY.—Many of the Banda Sea islands, including Babar, Romang, Sermata and Leti, were last surveyed more than 100 years ago. In October–November 2010, birds were surveyed on Romang (14 days), Sermata (eight days), Leti (five days) and Kisar (seven days), and on Babar in August 2009 (ten days) and August 2011 (11 days). Limited unpublished observations from Damar, Moa, Masela (off Babar) and Nyata (off Romang) are also included here. A total of 128 bird species was recorded (85 resident landbirds), with 104 new island records, among them five, 12, 20, four and three additional resident landbirds for Babar, Romang, Sermata, Leti and Kisar, respectively. The high proportion of newly recorded and apparently overlooked resident landbirds on Sermata is puzzling but partly relates to limited historical collecting. Significant records include Ruddy-breasted Crake *Porzana fusca* (Romang), Red-legged Crake *Rallina fasciata* (Sermata), Bonelli's Eagle *Aquila fasciata renschi* (Romang), Elegant Pitta *Pitta elegans vigorsii* (Babar, Romang, Sermata), Timor Stubtail *Urosphena subulata* (Babar, Romang), the first sound-recordings of Kai Cicadabird *Coraciina dispar* (Babar?, Romang) and endemic subspecies of Southern Boobook *Ninox boobook ciuuanouina* (Babar) and *N. b. moae* (Romang, Sermata?). The first ecological notes were collected for Green Oriole *Oriolus flavociuctus uigrator* on Romang, the lowland-dwelling Snowy-browed Flycatcher *Ficedula hyperythra audacis* on Babar, the endemic subspecies of Yellow-throated (Banda) Whistler *Pachycephala macrorhyncha par* on Romang, and Grey Friarbird *Philemon kissercusis* on Kisar and Leti.

The Banda Sea Endemic Bird Area is rich in endemic species with at least 41 restricted-range birds (Stattersfield *et al.* 1998). Babar (Babber), Romang (Roma), Damar, Kisar (Kisser), Leti (Letti), Moa and Lakor, and Sermata (Sermatta) are often referred to as the south-west islands. They lie in one of the most ornithologically neglected regions of South-East Asia; biogeographically, the avifauna is closely linked to Timor. For most islands the only primary information is from historical collections (Finsch 1901, Hartert 1900, 1904, 1906a) with recent avifaunal data only from Damar (Trainor 2002, 2007a,b) and Kisar (Trainor 2003, Trainor & King 2011). Apart from Damar, none of the south-west islands is known to host single-island endemic bird species, but Grey (Kisar) Friarbird *Philemon kissereusis* is endemic to Kisar, Leti and Moa, and there are many endemic subspecies including Banded Fruit Dove *Ptilinopus ciuctus lettiensis* and *P. c. ottonis*, Southern Boobook *Ninox boobook moae* and *N. b. ciuuanomina*, Little Bronze Cuckoo *Chrysococcyx minutillus rufomerus* and *C. m. salvadorii*, Cinnamon-banded Kingfisher *Todiramphus australasia dammerianus*, Elegant Pitta *Pitta elegans vigorsii*, Green Oriole *Oriolus flavociuctus uigrator*, Rufous-sided Gerygone *Gerygone dorsalis fulvescens* and *G. d. kuehni*, Pied Bush Chat *Saxicola caprata cognatus*, Yellow-throated Whistler *Pachycephala macrorhyncha par*, *P. m. coupar*, *P. m. daumeriana* and *P. m. sharpei*, Wallacean Whistler *P. arctitorquis kebirensis*, Arafura Fantail *Rhipidura dryas elegantula* and

R. d. reichenowi, Northern Fantail *R. rufiventris hoedti* and Red-chested Flowerpecker *Dicaeum maugei salvadorii*.

The collecting era in the south-west islands ended around 1906, with the exploration of Sermata (Hartert 1911a). The four most important collectors (with their assistants) were J. G. F. Riedel (August 1883: Leti, Moa, Lakor and Babar, and November 1883: Babar, Sermata [no birds known to have been collected], Luang, Leti, Kisar, Romang, Damar), D. S. Hoedt (1863–68: Romang [no birds collected], Kisar, Leti, Damar and Babar), H. Kühn (Romang, Damar, Kisar, Leti, Moa, Babar and Luang) and K. Schädler (Kisar and Babar) (van Steenis-Kruseman 1950, White & Bruce 1986). A major review of collections by Riedel, Hoedt and Schädler was published by Finsch (1901), and nine papers by Hartert (e.g. 1900, 1904, 1906a,b, 1911a–c) on the collections by Kühn and his native or local collectors. Additional bird species collected on these islands may exist in the Leiden or Dresden museums, but most were probably documented in publications by Hartert, Finsch and other authors (M. D. Bruce *in litt.* 2011). These list species and describe differences in bird morphology between the island populations, but there are few ecological data and these are primarily limited to location and date of collection for a small percentage of specimens.

Kühn's local workers visited Babar on c.12 August–29 September 1905 (Hartert 1906a; extreme dates of specimens); Kühn visited Romang on 14 July–20 August 1902 (Hartert 1904; extreme dates). Kühn's local workers visited Sermata ('Sermatta') on c.14–23 June 1906 collecting 114 specimens of 45 bird species (Hartert 1911a). Collecting effort on Babar 'does not seem to be a complete one, as the work ... had suddenly to be terminated, on account of the hostile behaviour of some of the natives' (Hartert 1906a). Effort on Sermata also disappointed Hartert. On Luang Island, adjacent to Sermata, a total of 47 species was previously recorded (Hartert 1906b, 1911c). Hartert (1911a) knew that the number of species on islands was related to land area, and because Sermata is larger than Luang (c.103 km² vs. 5 km²) he could not '...help thinking that an island like Sermatta must have more species. There is no *Corvus*, *Pachycephala*, *Myzomela*, or *Dicaeum* in this collection'. Avifaunal composition on Sermata proved most similar to the 'western islands'—the south-west islands then considered to include Wetar, Romang, Luang, Kisar, Leti, Moa and Kisar—and in some cases different from neighbouring Babar, but with no endemic forms (Hartert 1911b). There appears to have been no other ornithological investigation of the island, with one additional bird (Red-tailed Tropicbird *Phaethon rubricauda*) noted in the literature off south-west Sermata (Coates & Bishop 1997).

From the 16th century, the south-west islands formed part of the powerful Sultanate of Makassar, with Makassarese traders (up to 200 boats / *perahu* p.a.) visiting Arnhem Land in northern Australia in c.1720–1920 (Russell 2004) and establishing trading posts in the south-west islands (de Jong 2013). Islands such as Lakor and Luang were important fishing grounds for trepang (de Jong 2013) which was traded to Makassar. Kisar was an important regional harbour, hosted a Dutch fort and was a colonial outpost until c.1940 (de Jonge & van Dijk 1995). Colonial history was dominated by resistance from local islanders, with the last Dutch administrator of the south-west islands fleeing Kisar during 1810–17, after which the position was abolished (de Jong 2013).

PV visited Babar for ten days on 17–26 August 2009. CRT visited Romang (and the associated islet of Nyata), Sermata, Leti and Kisar in 2010, and Babar in 2011, with the aim of improving knowledge (avifaunal composition, habitat use, vocalisations and taxonomic status) of the avifauna, especially landbirds, in this remote corner of Indonesia. CRT transited several islands en route to Damar in August–September 2001 (Kisar, Leti, Moa and Masela off Babar), and during a visit to Wetar in 2008 (Leti and Damar) with some additional records from these periods included here. In September 2008, B. F. King visited

Kisar en route to Wetar and his records are also noted here. A Birdtour Asia party visited Leti and Babar in October 2011 (Eaton & Hutchinson 2011), from which some photographs, videos and sound-recordings have been archived at the Internet Bird Collection (IBC: <http://ibc.lynxeds.com>).

Study area and Methods

The name 'south-west' (Moluccan) islands is confusing because of their location in southern Maluku, but this terminology is used in modern-day Indonesia (the administrative district of 'Maluku Barat Daya' or south-west Maluku), historically in Dutch ('Zuid Wester Eilanden') and German ('Südwest Inseln', e.g. Finsch 1901).

Babar Island (620 km², 835 m elevation) is a limestone Outer Arc island 71 km north-east of Sermata and 132 km west of the Tanimbar Islands. Five satellite islands (Dai, Wetan, Masela, Dawera and Daweloor) cover an additional c.200 km². Romang (184 km², 747 m) is volcanic and lies in the Inner Banda Arc. It is one of the most isolated islands in the Banda Sea and lies 55 km east of Wetar, 66 km north-west of Leti and Moa, 78 km north-east of Timor and 122 km south-east of Damar (Fig. 1). At least seven satellite islands cover c.21 km². The largest are Moapora (c.14 km², 257 m) and Nyata (c.4 km², 277 m) (Fig. 1). Romang is dominated by two roughly circular peninsulas that comprise uplifted volcanic calderas that mineralised underwater. The southern peninsula consists of gently undulating land at 200–350 m (including uplifted coralline limestone), while the larger northern peninsula has many steep-sided hills above 500 m of which Mount Taur is the highest. Tropical evergreen forest dominates (c.80% of the island), but extensive areas near villages and much of the southern peninsula have been converted to swidden agriculture, now in various stages of regeneration. Patches of *Eucalyptus alba* woodland (c.10–15%) with a tall-grass understorey typically occur on ridges.

Sermata (c.105 km², 340 m), Leti (c.100 km², 370 m) and Kisar (117 km², 270 m) are Outer Banda Arc islands dominated by Quaternary limestone plains. On Sermata and Leti low-grade metamorphic rocks including various schists and metachert dominate the central inland hills. All three islands were raised above sea level by the collision of the Australasian and Eurasian continental plates. Sermata is 2.9 km east of the large atoll complex comprising Luang Island and Kelapa Island (c.4 km²), as well as extensive reef and sand spits (Fig. 1). Sermata is 167 km south-east of Romang and 117 km east of Leti. Leti lies 38 km east of Timor and 42 km south-east of Kisar. Leti is weakly isolated (<10 km) from Moa and Lakor, and together these are known locally as the 'Leti Islands'.

Original vegetation on Sermata would have comprised tropical forest with small patches of Lontar palm *Borassus flabellifer* savanna woodland on coasts and ridges, but most of the narrow (<300 m wide) coastal plain on Sermata has been converted to garden plots and coconuts. Inland areas are dominated by secondary tropical evergreen forest (to 40 m tall), with occasional gardens and coconut plantations. The coastal lowlands of Leti mostly comprise gardens and savanna woodland dominated by Lontar palm and *Eucalyptus alba*, with tropical forest in gullies and on hills in the island's central spine. Kisar is dominated by savanna woodland and gardens, with some larger forest trees in the valleys, but no forest patches greater than 2–5 ha remain.

PV visited Babar on 17–26 August 2009 exploring within a 10-km radius of Tapa on the west coast. CRT accessed Babar by *perintis* boat from Saumlaki, in the Tanimbar Islands, and surveyed birds within 5 km of Tapa (7–8 and 14–17 August) and Letwurung village on the east coast (9–14 August). Around Tapa, birds were surveyed in secondary coastal forest, beaches, mangroves, a river estuary (*air besar*), *Melaleuca* woodland, Lontar palm savanna and gardens. At Letwurung, CRT walked a river valley (*air besar*) c.10 km to the

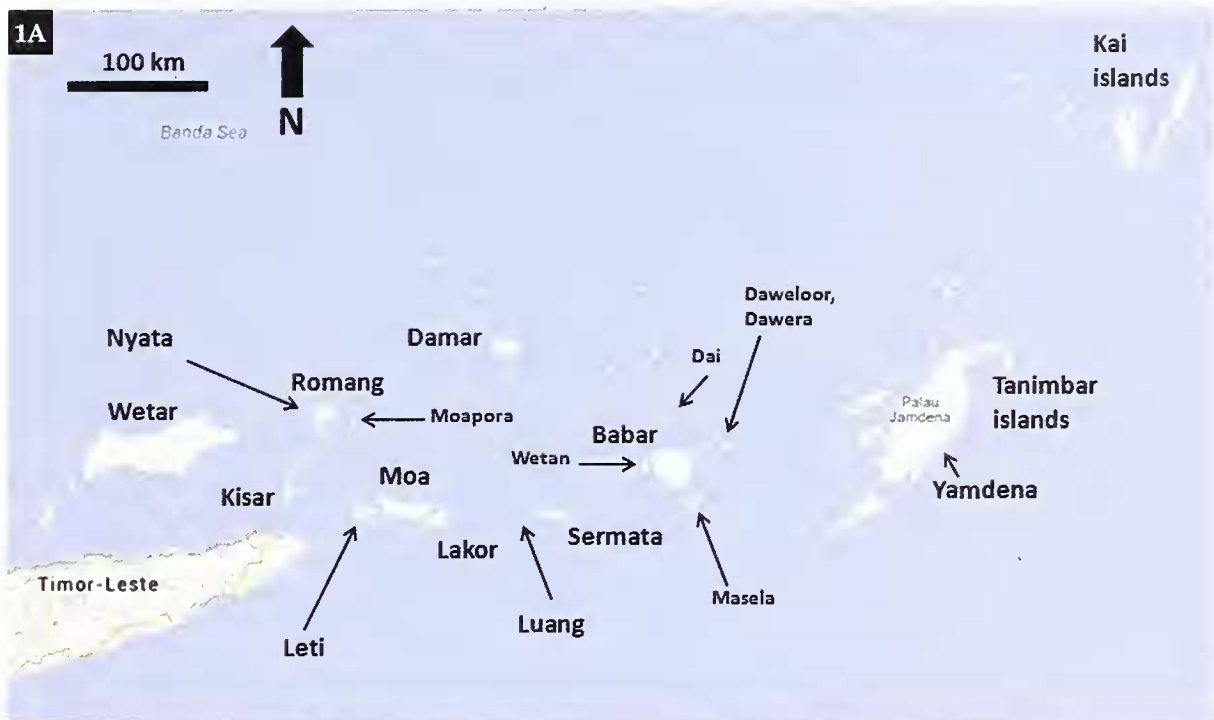
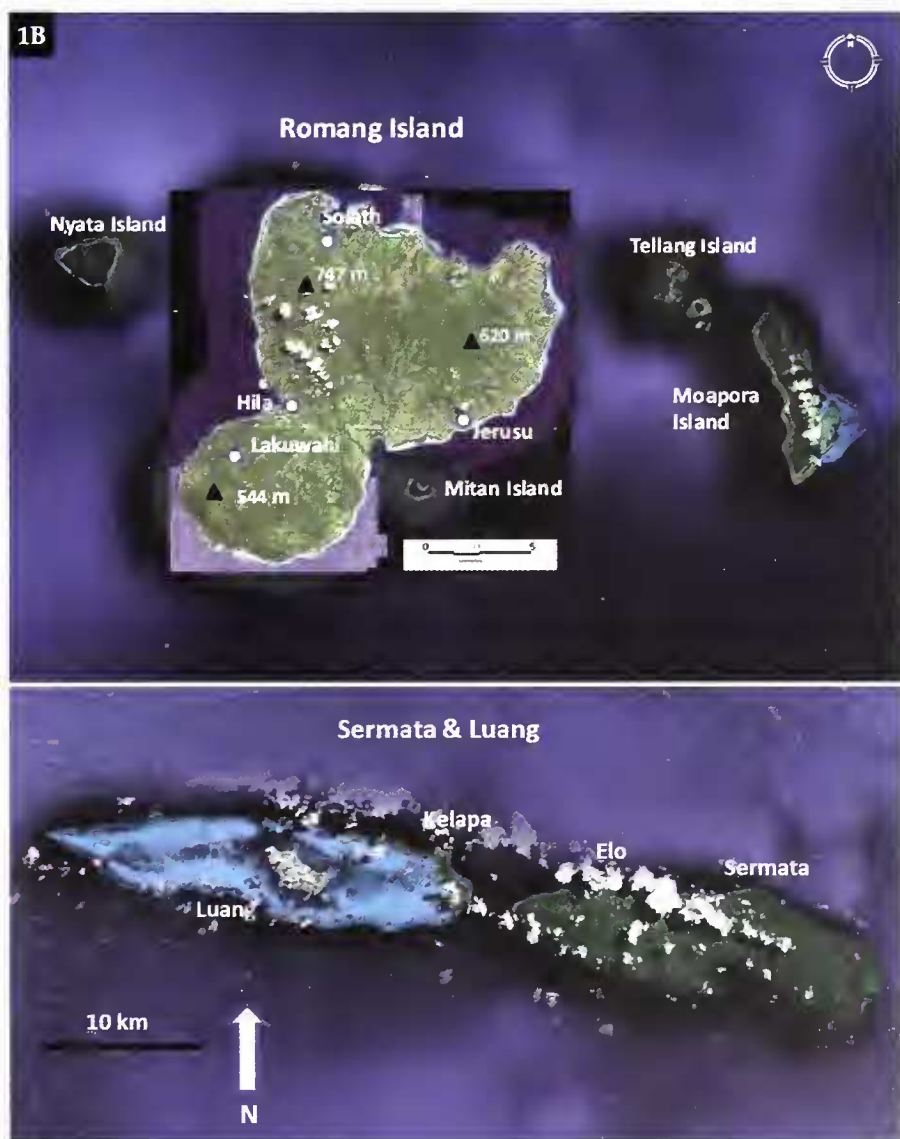


Figure 1A. Regional map of islands mentioned in the text; (B) Satellite map views of the complex island groups of Romang and associated islands (scale bar = 5 km), and Sermata, Luang and associated islands (scale bar = 10 km) (© Google Maps).



north-west and camped at 'Liliana' for two nights (9–11 August). The camp was at 240 m in a teak *Tectona grandis* plantation, within a landscape of extensive secondary and primary evergreen forest (up to 30 m tall) at 200–700 m. Beaches, gardens and two brackish lakes were also surveyed around Letwuring.

CRT used Kisar as a base over a two-month period and travelled to Romang by boat. Romang was surveyed on 13–26 October 2010, mostly within 5 km of the main village of Hila (Fig. 1b). Included was coastal lowland habitat (13–14 and 18–19 October; to 100 m elevation), mixed vegetable gardens, *Eucalyptus alba* woodland and primary evergreen forest (to 40 m tall) on the lower slopes of Mount Taur (15–18 October; to 550 m), and gardens, *E. alba* woodland and secondary evergreen forest (up to 25 m tall) at Lakuwahi (20–26 October; to 320 m). Nyata Island was visited late on 20 October with only *c.*2 hours along the coast before nightfall and at dawn on the following day.

Sermata was accessed on the *KM Bandaneira* (en route landing at Leti, Moa, Lakor and sailing past Metimeriang, Luang and Kelapa). Birds were surveyed mostly within a 3-km radius of the village of Elo in the north-west, on 1–9 November 2010. Habitats visited were village, coastal and inland gardens, coastal shrubland and strand, tropical dry forest on the coast and tropical evergreen forest at 60–200 m. CRT travelled to Leti on 10 November and spent five days (10–14 November 2010) within *c.*3 km of the main towns of Tombra and Serwaru, mostly in village, savanna woodlands and secondary forest. CRT contracted malaria on Sermata and was hospitalised on Leti, which reduced effective survey effort to *c.*2 days and nights, before returning to Kisar on 15 November by boat. He spent *c.*7 days on Kisar (11–12 October, 27–29 October and 16–17 November 2010) mostly around the airport and a nearby forested valley, in Wonreli town and a well-forested valley east of Wonreli.

To support identifications, and descriptions, we took photographs using a Canon 40D (PV) or 7D (CRT) digital camera with a Canon 100–400 mm lens. Photographs will be uploaded to the IBC. Sound-recordings were made with Olympus LS-10 (CRT) and Sony Minidisk Walkman (PV) recorders, and ME-66 Sennheiser directional microphones. Sonograms were prepared using Raven Lite 1.0 (www.birds.cornell.edu). Accession numbers for sound-recordings uploaded to the Avian Vocalisations Centre (<http://avocet.zoology.msu.edu>) are cited as AV0000 and those uploaded to www.xeno-canto.org are cited as XC000000. Taxonomy and nomenclature follow Gill & Donsker (2013).

Climatically, the survey period (in 2009–10) coincided with the transition from the late dry to early wet season, but because of a particularly notable La Niña event there was substantial unseasonal rainfall (in 2010) on all islands, including arid Kisar. Babar probably has moderate rainfall (1,500–2,000 mm / p.a.), Romang and Sermata are high rainfall areas (>2,000 mm / p.a.), but Leti and Kisar are typically dry (900–1,400 mm / p.a.). The 2011 visit was during the middle of the dry season with typically dry and fine conditions.

Species accounts

A total of 127 bird species (85 resident landbirds) was recorded on Babar, Masela, Romang, Sermata, Leti, Kisar, Moa and Damar, including 104 new island records (46 of them resident landbirds; Table 1). Although Sermata was relatively well surveyed, ten previously listed resident landbirds went unrecorded, but a further 20 resident landbirds were added to the island list. Ecological notes are presented for 58 bird species below, and brief notes appear in Appendix for the other 70 species recorded. Seventeen species were recorded during a brief visit to Damar, near Wulur village, in September 2008 (three new island records), six species on Moa Island (one new island record) in 2001 and two species on Masela (both new) in 2001 (see Appendix 1). One provisional record is included in square brackets.

TABLE 1

Bird composition on islands visited including the total number of species recorded during the survey, the number of species unrecorded since the collecting era and (in parentheses) the number of new island records.

Groups	Babar	Romang	Sermata	Leti	Kisar
Total	76/23(18)	68/16(24)	52/28(32)	44/31(15)	43/12(9)
No. resident landbirds	45/6(5)	51/6(12)	36/10(20)	30/10(5)	32/6 (3)
No. resident waterbirds	4/2(1)	6/2(4)	6/2 (3)	2/2(1)	2/2(1)
No. migrants / visitors	9/15(12)	11/9(8)	11/15(9)	12/19(9)	9/5(5)
No. other migrants / visitors	0/4(7)	5/3(4)	4/3 (4)	6/4(5)	3/3(3)
No. shorebird visitors	6/6(5)	5/2(4)	6/6(4)	4/11(2)	2/0(0)
No. Australian visitors	3/5(0)	1/4(0)	1/6(1)	2/4(2)	4/2(2)

AUSTRALASIAN GREBE *Tachybaptus novaehollandiae*

Sermata Adult photographed on a pond near Elo at 120 m on 4 October 2010. **Leti** Adult with four stripe-headed chicks photographed on a small (0.5-ha) pond at 110 m on 13 October 2010. Small numbers in much of Wallacea (Kai, Tanimbar, Timor, Alor, Roti, Flores, Ternate, Sangihe and Talaud) except Sulawesi. Breeding records from Java and Timor generally considered as vagrants, rather than reflecting presence of tiny resident populations (White & Bruce 1986). Our records are significant because of the regional dominance of Tricoloured Grebe *T. tricolor* (e.g. flocks of >80 on Timor). Six *T. tricolor* were seen on Babar (Appendix 1). Published records of Australasian Grebe for Bali, Alor and Flores all involve singles (Mees 2006) and the breeding records on Timor (Trainor 2005a) and now Leti, refer to single adults with chicks. Two adults and a juvenile were on Ambon on 17 November 2012 (Robson 2013). Two recent records of larger groups: in June 2009, 37 were at Ujung Pangka, East Java, including one on eggs and another adult with two young (van Balen *et al.* 2011), and at least five active nests and 20–30 birds on Ternate, May 2012 (van Balen *et al.* 2013).

VARIABLE GOSHAWK *Accipiter hiogaster polionotus*

Babar Relatively common with 1–3 observed daily, being sound-recorded (XC138363, 18364) and photographed near Tepa and Letwurung (PV & CRT). Commonest in coconut groves and degraded agricultural areas, with unconfirmed vocal records (possibly Brown Goshawk *A. fasciatus*, which is known from the island) in secondary forest to 300 m. Recorded at most sites on Damar (Trainor 2007b), moderately common on Tanimbar (Bishop & Brickle 1998) but possibly absent from Romang and Sermata.

BROWN GOSHAWK *Accipiter fasciatus wallacii*

Romang Immature in secondary forest at c.300 m, photographed and sound-recorded, is the first Romang record. The call was a low-pitched (1,600–2,600 Hz) bout of 10–15 nasal (tonally complex) *hi-hi...* notes, with bouts given c.10 seconds apart (XC138953). Another goshawk seen in flight over Hila village was seen too briefly for positive identification. *A. f. wallacii* occurs from Lombok to Wetar, Moa, Leti, Sermata, Babar and Damar (White & Bruce 1986). Although collected on Babar, Leti and Sermata, there were no confirmed

records in 2009–11, and it appears to be relatively rare in the region. Only one or two recent Wetar records (Trainor *et al.* 2009) but frequent on Damar (Trainor 2007b).

BONELLI'S EAGLE *Aquila fasciata renschi*

Romang Singles photographed in flight at the mine camp and in *Eucalyptus* woodland below Mount Taur. **Sermata** One photographed at Elo village on 6 November 2010. The Lesser Sunda endemic *A. f. renschi* was collected on neighbouring Luang (Hartert 1906b) and occurs from Lombok to Yamdena (Trainor *et al.* 2013); the Romang and Sermata records fill important distributional gaps. *A. f. renschi* is isolated from the nearest resident population (Vietnam) by c.2,500 km and is typically one of the commonest large raptors resident in the Lesser Sundas (Trainor *et al.* 2013).

BROWN QUAIL *Coturnix ypsilophora raaltenii*

Romang One heard (*berip*) once in regenerating garden, while a single egg (28.0 × 22.5 mm) was found on the ground at the Lakuwahi mine camp on 25 October 2010. It was identical to published photographs of the species' eggs (Johnstone & Storr 1998; R. Johnstone *in litt.* 2011). **Kisar** Heard a few times in open savanna near the airport on 12 October 2010. **Leti** One heard once in grassy savanna. Widespread in the Lesser Sundas and expected for Romang. Historically, collected on Kisar, Moa, Leti, Luang and Tanimbar (Coates & Bishop 1997). On Kisar, villagers considered the species abundant, with quail eggs regularly sold in markets and to restaurants in Wonreli.

MALAYSIAN PLOVER *Charadrius peronii*

Romang Two pairs seen and one male photographed with white hindneck collar (thereby excluding Red-capped Plover *C. ruficapillus*) on Nyata Island on 20 October 2010. **Kisar** A pair photographed (white hindneck collar and male with black patch below hindneck collar) on the beach east of the airport on 12 October 2010. This Near Threatened beach-dwelling plover is widespread through western Indonesia and the Lesser Sundas to Alor and Timor, being frequent in Timor-Leste (Trainor 2005a, 2011), and these two new island records marks the species' south-easternmost limits.

RUDDY-BREASTED CRAKE *Porzana fusca*

Romang Incidentally sound-recorded before dawn in evergreen forest at 300 m on 18 October 2010, and at 17.50 h in secondary forest. The call is a rapid low-pitched trill over five seconds (XC137915, 137913). The same call type was heard at dusk on Nyata Island on 20 October 2010. Compared to Red-legged Crake *Rallina fasciata*, the trill is faster, higher pitched, somewhat wavering, and not usually preceded by introductory notes (e.g. XC138533; B. van Balen *in litt.* 2013). Rails are poorly known in Wallacea, with knowledge of vocalisations slowly improving via sound depositories such as www.xeno-canto.org. *P. fusca* occurs on Sulawesi, Flores and Sumba (Coates & Bishop 1997), with recent new records from Timor (Trainor 2011) and Alor (XC105146; J. Hornbuckle *in litt.* 2013).

RED-LEGGED CRAKE *Rallina fasciata*

Sermata A rail sound-recorded (XC138533) at and after dusk, but not seen, in shrubby gardens behind the beach was subsequently identified as this species on the basis of recordings at www.xeno-canto.org. The call commences with a brief introductory *e-yeck* followed by a rapid low-pitched trill (1,040–2,500 Hz) comprising c.30 notes over 3.3 seconds that descends from an initial high of 2,500 Hz to 1,780 Hz, and is identical to recordings made on Romang. *R. fasciata* is poorly known in Wallacea. It was recently found

to be a breeding visitor to West Timor (Dymond 2010, Trainor 2011) and otherwise is known from Lombok, Sumbawa, Flores, Alor and Kisar in the Lesser Sundas (White & Bruce 1986). Recordings from Singapore and Kalimantan (www.xeno-canto.com) are similar to that made on Sermata, but differ from the *go-go...* notes of birds described for Flores (Schmutz 1977, Hutchinson *et al.* 2006). Taylor & van Perlo (1998) stated that Red-legged Crake and Ruddy-breasted Crake *P. fusca* have similar vocalisations. The recent Timor records confirm that Red-legged Crake does breed in the Lesser Sundas, and presumably the records for Romang, Nyata and Sermata are of wet-season visitors, suggesting that it occurs more frequently than suspected. Two records of vagrants to Australia in late May and July (Christidis & Boles 2008).

[PALE-VENTED BUSH-HEN *Amaurornis moluccana*]

Sermata Contact notes (XC137917–918) initially presumed to be of White-breasted Waterhen *A. phoenicurus* were a low-pitched (900–1,400 Hz) and persistent single *duk, duk...* repeated for minutes at night, perhaps sometimes for hours. They differ from alarm notes (strong *ook* at 700–1,600 Hz) of White-breasted Waterhen sound-recorded on Lembata (XC102911–912) and to alarm notes reported for Red-legged Crake on Timor (Dymond 2010). They also differ from contact notes of Ruddy-breasted and Red-legged Crakes (www.xeno-canto.com). The vocalisations best match the persistent calls of Pale-vented Bush-hen in eastern Australia (L. Neilson & M. Cachard *in litt.* 2013) and Wallacea (R. Hutchinson & J. Eaton *in litt.* 2013). In Wallacea, widespread on Sulawesi and in the Maluku region with recent records on Tanimbar and Kai, and co-occurs with *A. phoenicurus* on Talaud and Taliabu (Coates & Bishop 1997, Taylor & van Perlo 1998).

WHITE-BREASTED WATERHEN *Amaurornis phoenicurus leucomelana*

Romang Frequently heard giving a monotonous cluck or raucous squabbling calls in secondary and primary forests, and the edge of gardens, to at least 400 m, and also recorded on Nyata Island (XC137916). On Romang one was photographed by a spring in the late afternoon. **Sermata** Heard at dusk and shortly afterwards on most evenings in gardens, forest edge and shrubland, with sound-recordings of the raucous squabbling given by 2+ birds (XC138531–532). Initially, it was assumed that a trill was also produced by White-breasted Waterhen, but this was subsequently identified as Red-legged Crake (above). The species appears to be absent from the dry island of Kisar. Subspecific variation clarified by Hartert (1904): Sulawesi and west Nusa Tenggara populations up to Sumbawa were included in *A. p. phoenicurus*, with *A. p. leucomelana* listed for Flores, Timor, Wetar, Romang and Tukangbesi. On Romang, six specimens including a juvenile were collected (Hartert 1904). Our Sermata record is the south-easternmost. No rails were confirmed during our visits to Babar, where White-breasted and Pale-vented Bush-hens might be expected (although calls probably attributable to an *Amaurornis* were heard by PV). White-breasted Waterhen has been collected on Damar, but was not recorded during the recent dry-season visit (Trainor 2007b).

METALLIC PIGEON *Columba vitiensis metallica*

Babar A few heard calling (deep *woo-ahh* double notes, similar to Timor recordings: AV8866) above Liliana at 550 m, but none observed. **Romang** Singles flushed at the edge of secondary forest overlooking gardens at c.300 m, and one photographed in the canopy. Distributed from Lombok to Moa, Damar and Babar, the Romang record fills a gap in the species' range. None observed on Sermata or Leti, but presumably present on both; local people stated that they occasionally saw 'black' pigeons in forest on Leti Island.

BAR-NECKED CUCKOO-DOVE *Macropygia magna magna*

Romang One of the commonest pigeons on the island, the characteristic three-note call of *M. m. magna* was heard regularly and sound-recorded in secondary and primary forests and old gardens, and one was photographed. Also heard on Nyata Island. An undescribed two-note call (XC139671–672) was recorded at c.430 m in evergreen forest. It commences with an upslurred note increasing in intensity, a pause of c.0.5 seconds before a quieter, low-pitched *waruk-woo*, similar to the first part of the three-noted *warack woo-woo* call but with substantially less energy. This call is dissimilar to the two-note call given by *M. m. timorlaeensis* (XC37868) of Tanimbar. The most common vocalisation was a three-note call (XC139675, 137677) typical of *M. m. magna*, at 600–1,000 Hz and similar to but less energised than Timor birds (e.g. XC32991). Common in forest on most islands including Timor, Alor, Atauro and Wetar (Trainor & Soares 2004, Trainor *et al.* 2008, 2009). Surprisingly, none was heard or seen on Sermata, although an adult was collected there historically (Hartert 1911a), or on Kisar or Leti. Any Kisar population might have been extirpated, as the recent visit covered parts of the best remaining forest, and it was not seen in 2001 (Trainor 2003) or 2008 (B. F. King *in litt.* 2009). Differences in vocalisations among the subspecies suggest that at least three species might be recognised within this complex (Eaton & Hutchinson 2011). The absence of this dove on Babar is notable.

BANDED FRUIT DOVE *Ptilinopus cinctus*

Babar (*ottonis*) Frequently heard in primary and secondary forest near Tapa (PV) and at Liliana up to 400 m (CRT). **Romang** (*cinctus*) Common in primary and secondary forest at 0–550 m. Nest with one egg photographed at 450 m. The nest was 4 m above ground in a *Myristica* sp. tree and comprised c.40 thin twigs (c.2–3 mm wide). A second nest was found nearby, and courtship behaviour by adult birds (noisily chasing each other through the canopy) seen on several occasions. A squab in pin was found on the ground by local people near the mine camp on 22 October 2010. Song is a low-pitched (230–430 Hz) *woo* (XC139670, 139698), as described on Timor (Coates & Bishop 1997). **Sermata** (*lettiensis*) Regularly heard in forest and at edges. A flock of >30 observed flying into a fruiting tree at the edge of evergreen forest, and one photographed nearby. Common throughout much of its range (Coates & Bishop 1997), including on Romang, Sermata and Damar (Trainor 2007b). Some 30 specimens were collected by Kühn on Romang (Hartert 1904). *P. c. lettiensis* of Leti, Moa, Luang and Teun appears weakly differentiated from other forms, having the ‘tail tip whiter and broader’ (White & Bruce 1986), but also has a substantially broader black breast-band than *P. c. cinctus* on Romang (Fig. 2a–c). *P. c. ottonis* of Babar, Damar and Nila also appears weakly differentiated from other forms, and vocalisations on Babar and Damar are almost identical, a slow low-pitched *woo* at 180–450 Hz (XC140167). A recording from Damar appears to be a duet between a pair, with one bird’s calls at slightly higher frequency (200–500 Hz: XC66901). *P. c. lettiensis* on Sermata also gives a slow *wuu* repeated at c.1-second intervals, like other subspecies (Coates & Bishop 1997).

ROSE-CROWNED FRUIT DOVE *Ptilinopus regina*

Babar (*xanthogaster*) Widespread and frequently heard (XC138366) in secondary and primary forest up to c.650 m above Liliana, and occasionally seen and photographed (PV & CRT). **Romang** (*roseipileum*) Frequently heard in secondary forest and garden edge at Lakuwahi, and heard on Nyata Island, but unrecorded below Mount Taur. Call a series of accelerating slurred *woo* notes (XC140168) that varies little between different subspecies, or islands. Low-pitched (400–600 Hz) ‘seesaw notes’ (XC139697) given in contact, as described by Coates & Bishop (1997). **Sermata** (*xanthogaster*) One photographed in scrub behind the



Figure 2. Banded Fruit Dove *Ptilinopus cinctus* is represented by three subspecies in the south-west islands: (A) *P. c. cinctus* of Romang has narrow white tail tip and thin black breast-band; (B) *P. c. lettiensis* of Sermata has extensive white tip to tail and broad black breast-band; and (C) *P. c. ottonis* on Babar has indistinct tail pattern (Colin R. Trainor)

Figure 3. Two subspecies of Rose-crowned Fruit Dove *Ptilinopus regina* occur in the south-west islands: (A) male *P. r. xanthogaster* on Sermata has pale grey head (puffed-up after heavy rain); (B) male *P. r. roseipileum* on Romang has white forehead and blackish rather than green primaries; and (C) first-year female *P. r. xanthogaster* from Tapa, Babar, with grey cap, but green head- and neck-sides, and scalloped coverts (Colin R. Trainor)

beach and one seen flying over, with a few voice-only records (similar to calls on Romang). **Leti** One in Tombra village, but not heard, on 13 November 2010. **Kisar** One in flight and heard calling three or four times. Common in lowland habitats in the Lesser Sundas and Banda Sea islands, except on Flores, where there is just one recent record (Lesmana *et al.* 2000). *P. r. roseipileum* (Romang, Moa, Leti, Kisar, East Timor and Wetar) differs little from *P. r. xanthogaster* (Fig. 3a–c) (Damar, Kai, Tanimbar, Babar and Luang) and all of the subspecies appear to differ little in vocalisations. Johnstone (1981) proposed to unite *flavicollis* (Flores,

Sawu, Roti, Semau and West Timor) and *roseipileum* with *ewingii* (of Western Australia and Northern Territory, Australia) mostly because of perceived overlap in crown colour. However, on Timor *flavicollis* (mostly in West) and *roseipileum* (in East Timor) have strikingly different crown colours, and these may be species-level taxa.

ELEGANT IMPERIAL PIGEON *Ducula concinna*

Babar Common in primary and secondary forest at Liliana to c.650 m, and occasional in degraded secondary forest near Tapa (PV & CRT); several shot by hunters (PV). **Damar** Two heard near Wulur on 24 September 2008. **Romang** Abundant in primary forest at 200–550 m below Mount Taur, but more local and less common in secondary forest on the southern peninsula. Call a raucous *urauw* at 800–1,400 Hz, over 0.8 seconds, often preceded by a rapid single or repeated *buk* note that carries hundreds of metres in forest. **Sermata** Small numbers in tall evergreen forest at 100–200 m, but absent from secondary forest near the coast. Widespread in the Banda Sea region including on Moa, Romang, Babar and Damar, Teun, Kai and Tanimbar (White & Bruce 1986) and was expected on Sermata. Heavily hunted on Damar impacting populations close to villages at least (Trainor 2007b). None recorded on Leti, but could be present in better quality forest that was not visited.

PINK-HEADED IMPERIAL PIGEON *Ducula rosacea*

Babar Uncommon, with singles or small groups occasionally heard in primary forest around Liliana at 200–400 m, but none recorded in coastal gardens or secondary forest. **Romang** Noted on the coast on 13 August 2001; in 2010 this small-island pigeon was common at 0–550 m in primary and secondary forest, and at edge of gardens, and heard in forest on Nyata Island. **Sermata** Fairly frequent at the edge of secondary forest with c.10 heard per day and two photographed in evergreen forest at 150 m. This Near Threatened pigeon is much sought-after by hunters, but is common in forest in Timor-Leste (heavily hunted in the West), abundant on Wetar and Damar (Trainor 2007b, Trainor *et al.* 2009) and some other islands in the Banda Sea visited recently (Bishop & Brickle 1998). It was collected on Kisar (Hartert 1904) and recorded again in 2001, but not in 2008 (B. F. King *in litt.* 2009) or 2010, perhaps suggesting a decline, or that the species only visits the island. Status on Babar unclear, but might have been heavily impacted by hunting.

MARIGOLD LORIKEET *Trichoglossus capistratus flavotectus*

Romang Apparently uncommon, with only a few sightings of pairs or threes flying past camp at 320 m, and over primary forest at 490 m. A few calling in secondary forest near the mine camp on 24 October: a series of high-pitched, harsh shrieks, typical of the Rainbow Lorikeet *T. haematodus* superspecies and at similar frequency to Olive-headed Lorikeet *T. euteles*. On Wetar *T. c. flavotectus* is common (Trainor *et al.* 2009), but there is no recent information on Red-collared Lorikeet *T. rubritorquis* (recognised at species level by Gill & Donsker 2013), of which a specimen is available from Romang and two from Kisar (Hartert 1904, Coates & Bishop 1997). *T. rubritorquis* occurs naturally in northern Australia and its presence in the south-west islands perhaps reflects trade during Makassar–Aboriginal interactions (*cf.* Russell 2004). Twenty-seven specimens of *T. c. flavotectus* were collected on Romang by Kühn (Hartert 1904) perhaps indicating that it was formerly more common.

OLIVE-HEADED LORIKEET *Trichoglossus euteles*

Babar Uncommon with small numbers (groups of 1–5) heard most days, feeding in coastal *Casuarina* sp. and *Erythrina variegata*, and seen occasionally over gardens and secondary forest (PV & CRT). **Romang** Frequently heard and seen in pairs or small flocks of up to ten,

in all habitats including *Eucalyptus* woodland, flying over villages, primary and secondary forest, at 0–550 m. **Sermata** Common in pairs and threes in all habitats including village, and regularly seen feeding in coconut palms up to 150 m. **Leti** Common with birds visiting the main villages to access Lontar palm flowers, usually as singles, pairs or threes. **Damar** Two perched in mangrove and heard *c.*6 times in three hours, flying over the village. Regionally, known from Wetar, Timor, Kisar, Luang, Leti, Babar, Romang and Damar (White & Bruce 1986) and was expected for Sermata. Common on most islands except Kisar, where none recorded in 2001 and 2010, but one was seen in 2008 (B. F. King *in litt.* 2009). Possibly occasionally visits Kisar from neighbouring islands, as there appears to be no resident population (Trainor 2003).

BLUE-STREAKED LORY *Eos reticulata*

Babar Uncommon, with a few vocal-only records of 2–3 birds overflying tropical forest at Liliana (XC144149). Uncommon on Damar (Trainor 2007) but relatively common on the Tanimbar Islands (Bishop & Brickle 1998) and presumably declining due to the cagebird trade, although recent broad-scale data are unavailable. Introduced historically to the Kai Islands, where only two recent records, of one and two birds (Johnstone & van Balen 2013).

GREAT-BILLED PARROT *Tanygnathus megalorhynchos subaffinis*

Babar Single heard in flight over tropical forest near Liliana at 300 m on 11 August 2010. Seven collected near Tepa by Kühn (Hartert 1906a). Restricted to Babar and the Tanimbar Islands. On Yamdena, also apparently uncommon, with ones or twos heard overflying semi-evergreen forest, day and night (Bishop & Brickle 1998). One of the most localised resident landbirds in the Lesser Sundas, with few recent records from Timor or Flores, perhaps due to loss of *Canarium*-dominated coastal swamp forest and captures for the cagebird trade (Butchart *et al.* 1996, Coates & Bishop 1997). A population of *c.*1,500 birds was estimated on Sumba, where it is the least abundant parrot on the island (Linsley *et al.* 1998).

LITTLE BRONZE CUCKOO *Chrysococcyx minutillus*

Babar (*minutillus* & *salvadorii*?) Moderately common in coastal mixed gardens and secondary forest at Tepa (PV & CRT), and frequent in evergreen forest at Liliana. **Romang** Frequently heard in regenerating gardens, primary and secondary forest, at 0–550 m, and on Nyata Island. Those observed were *C. m. minutillus* (*cf.* Erritzøe *et al.* 2012: 372). A long trill of 3.5 seconds, starting at 3,070 Hz, rising to 3,400 Hz, then accelerating down to 2,900 Hz (XC139669, 139694) recorded on Romang was almost identical in length and pitch to recordings of *C. m. rufomerus* from Damar (Trainor 2007b). The whistled song of *kiri* notes (XC139665, 139667, 139693), with or without a gargled terminus, was similar to that recorded on Damar (XC66889, 66907; Trainor 2007b). **Sermata** The *c.*3-second descending trill and *kiri kiri* song was heard seven times over three or four days, but was not sound-recorded, although they sounded similar to calls heard on Romang, Damar and Kisar. At least two were heard adjacent to coastal gardens on 5 November 2010, but none was seen. Only *C. m. rufomerus* has been collected on Sermata. **Leti** The long trill was heard in Serwaru village on 25 September 2008, and heard (once) in open savanna woodland on 13 November 2010. Both *C. m. minutillus* and *C. m. rufomerus* have been collected on Leti. **Kisar** The long trill was sound-recorded (XC138464) and a series of three notes recorded near the airport on 12 October 2010, but none was seen. The trill was of similar pitch and length (3.3 seconds) to recordings from Romang. Only *C. m. rufomerus* has been collected on Kisar.

Taxonomy of Banda Sea forms, including the distinctive *C. m. salvadorii*, unclear. Based on vocalisations, *C. m. rufomerus* on Damar was included within Little Bronze Cuckoo

(Trainor 2007b), rather than as a distinct species (Coates & Bishop 1997). There appear to be at most minor vocal differences between the various forms on Timor, Wetar and the south-west islands. Erritzoe *et al.* (2012), and Gill & Donsker (2013) retained *rufomerus* and *crassirostris* (Babar, Tanimbar, Kai and Maluku) as subspecies of *minutillus*. Further work on the genetics of these forms is required, as well as improved vocal sampling throughout the islands. Only *C. m. salvadorii* previously known on Babar, but none observed by us, and typical *C. m. minutillus* (previously unrecorded there) photographed during the Birdtour Asia visit (<http://ibc.lynxeds.com>).

LESSER COUCAL *Centropus bcngalensis sarasinorum*

Babar Heard once briefly in gardens south of Letwuring and once in secondary forest south of Tepa. **Romang** Frequently heard in *Eucalyptus alba* woodland with a grassy understorey and in shrubby regenerating gardens. Six juveniles collected in July–August 1902 (Hartert 1906a). **Sermata** Although not previously recorded, frequently heard in shrubland adjacent to gardens near the coast, and in garden mosaics at the edge of evergreen forest to 200 m. A fledgling and heavily moulting adult were photographed near Elo village. Call a typical accelerating series of low-pitched (c.1,000 Hz) *tek, tuk, buk* or *toto* notes (XC138524, 138526) as described for Sulawesi (Coates & Bishop 1997). **Kisar** Occasionally heard in grassy savanna and at Wonreli town. **Leti** Heard in grassy savanna and secondary regrowth. One of the most widespread birds in the Lesser Sundas, with exceptional colonising abilities (Trainor 2010) and was expected for Sermata and Babar, near the south-east limits (Yamdena) of its distribution (Coates & Bishop 1997).

EASTERN BARN OWL *Tyto delicatula delicatula*

Babar Seen and frequently heard (AV9066) in woodland near Tepa (PV). **Romang** Drawn-out shrieks heard frequently after dusk and before dawn, with a few recordings (XC138614–615). The silhouette of one flying c.40 m above ground seen over a garden surrounded by primary forest at 320 m. **Sermata** Heard most nights (XC138613). Common in gardens and evergreen tropical forest, with up to three audible simultaneously. Screeches similar on Romang and Sermata, low-pitched (1,600–3,160 Hz) lasting 0.7–0.8 seconds with 0.6–2.1 seconds between notes. Widespread in the Lesser Sundas including on Wetar, Kisar, Damar (Coates & Bishop 1997, Trainor 2007b) and the Flores Sea islands, these three new island records help to define its regional distribution. In the absence of masked owls *Tyto* spp. (except Tanimbar), apparently common in a variety of habitats on the Lesser Sundas including tropical evergreen forest and mangroves (Trainor 2007b, Trainor *et al.* 2012; F. R. Rheindt *in litt.* 2007). On Kisar, they roost and breed on coastal cliffs and overhangs (Hartert 1904) but none was recorded in 2008 (B. F. King *in litt.* 2009) or during limited nocturnal observations in 2010.

SOUTHERN BOOBOOK *Ninox boobook*

Babar (*cinnamomina*) Several heard and photographed (Fig. 4) in woodland near Tepa (PV), forest at Liliana (CRT) and a juvenile begging in woodland near *air besar* (PV). **Romang** (*moae*) Widespread at 0–400 m at the edge of gardens, primary and secondary forests, and according to local people occasionally in Hila village. Small increase in rate of vocalisations after dusk, but generally called irregularly until 01.00 h, typically for brief periods of 2–5 minutes. The local name ‘cuck-oo’ describes the call—two level notes over 0.65 seconds. No duets heard, though up to two or three birds called simultaneously or in turn. **Sermata** (*cf. moae*) First island records from gardens and edge of tropical forest, where it called each night after dusk until at least 23.00 h. Call comprises either two or four throaty *cook* and

cuck coo notes, similar to those of Sunda Cuckoo *Cuculus lepidus*. Song places Sermata birds within, or close to, subspecies *moae*. **Leti** (*moae*) At least one heard at the edge of Serwaru village at 03.00 h on 10 November 2010, and sound-recorded on 14 November. Well known to local people and presumably common (PV). Call a two-note *wo-hoo* at 600–760 Hz (or sometimes a pair of double notes), the first note an overslur, rising to 760 Hz then falling and the second level at 670 Hz.

Southern Boobook is widespread in the central Lesser Sundas including Alor (*plesseni*), Roti (*rotiensis*), Timor (*fusca*), Romang (*moae*), Leti (*moae*), Moa (*moae*) and Babar (*cinnamomina*) (White & Bruce 1986, Johnstone & Darnell 1997). The new Sermata record might represent an undescribed subspecies. Apparently absent on Kisar, as none was recorded over *c.*4 nights in 2008 (B. F. King *in litt.* 2009) or on one night in 2010 in some of the best-quality forest remnants (CRT unpubl.). Both *cinnamomina* and *moae* have two-note calls, typical of the species in Australia, but some inter-island vocal differences exist. A thorough review of these taxa is now underway using genetics and vocalisations (Verbelen 2010, Trainor *et al.* 2012). The Roti taxon *rotiensis* (Johnstone & Darnell 1997, Verbelen 2010) and *plesseni* on Alor (Trainor *et al.* 2012) appear to be vocally distinct and might be recognised specifically.

LARGE-TAILED NIGHTJAR *Caprimulgus macrurus schlegelii*

Babar Sound-recorded near Tapa (PV) and heard twice in degraded coastal forest south of Tapa on 14 and 16 August 2011. Call a *tok* or *chok* typical of the species. There are few recent published records from the Tanimbar Islands (Coates & Bishop 1997, Robson 2010).

SAVANNA NIGHTJAR *Caprimulgus affinis timorensis*

Leti (subspecies?) One gave the characteristic *schleip* call at 20.00 h on 14 November 2010 in savanna woodland. **Kisar** Several heard above a well-forested ravine south-east of Wonreli on 29 October 2010; 13 recorded in 2008 (B. F. King *in litt.* 2009). Widespread on Sulawesi and most of the drier Lesser Sundas (White & Bruce 1986). Song remarkably uniform throughout mainland and insular South-East Asia (www.xeno-canto.org). The Leti record marks the species' south-eastern limits, with four specimens taken on Kisar (Hartert 1904). The Leti bird presumably is close to *C. a. timorensis*, described from Timor, with Kisar included in this subspecies' range based mostly on geography (Mayr 1944). Expected for Moa and Lakor. Surprisingly, it appears to be absent on Wetar (Trainor *et al.* 2009; CRT unpubl.). On Babar unidentified nightjars were flushed from open woodland with a grassy understorey (PV) but the absence of vocalisations suggested that these might have been migrants (possibly Spotted Nightjar *Eurostopodus argus*).

CINNAMON-BANDED KINGFISHER *Todiramphus australasia*

Babar (*dammerianus*) Frequently heard (AV8917, XC138365) in degraded secondary forest at Tapa (PV & CRT) and Letwurung, and primary evergreen forest to *c.*650 m above Liliانا. Those photographed near Tapa (PV & CRT) had the all-rufous crown characteristic of this subspecies. **Romang** (*australasia*) Recorded frequently, mostly by voice (XC139696), at 0–550 m, in secondary and primary forest. Two photographed in secondary forest on the slopes of Mount Taur. **Sermata** (*dammerianus*) The distinctive *ch-w'wee* notes described by Coates & Bishop (1997) heard three times in evergreen forest at 150 m on one day, but none seen and no subsequent records. Represented on Moa, Leti, Damar and Babar by *T. a. dammerianus*, which was expected for Sermata, but was not collected in 1906 (Hartert 1911a). Occurs from Lombok to Tanimbar (absent between Sumbawa and Alor), with little vocal variation between subspecies. Has been considered Near Threatened because of expected rates of



Figure 4. The Babar endemic subspecies of Southern Boobook *Ninox boobook cinnamomina* is deep cinnamon dorsally, with brown crown and cinnamon streaking on underparts (Philippe Verbelen).

Figure 5. Wallacean Cuckooshrike *Coracina personata* on Romang, Timor and Wetar is represented by *C. p. personata*, but those on (A) Romang appear darker slaty grey than on (B) Timor (Mount Ramelau, East Timor) or (C) Wetar, but this is probably caused by canopy shading and reduced light in the photographs (Colin R. Trainor); (D) Comparison of specimens from, left to right, Romang, Timor and Alor (*C. p. alfrediana*), with female left of male in each pairing (Colin R. Trainor / © Natural History Museum, Tring).

forest loss, but this seems too pessimistic as it maintains healthy populations throughout many areas (e.g. Trainor 2007b, Trainor *et al.* 2009, Trainor 2010).

SWIFTLET spp.

Babar Although previously unrecorded, swiftlets were frequently observed in groups of up to 10–20 over villages, gardens, secondary and primary forest (PV & CRT). Those photographed were similar to Uniform Swiftlet *Aerodramus vanikorensis* (J. Eaton & P. Morris *in litt.* 2013) but conclusive identification must await specimens and perhaps molecular work. Edible-nest Swiftlet *A. fuciphagus* was observed and photographed in October 2011 (J. Eaton *in litt.* 2013); **Romang** Glossy Swiftlet *Collocalia esculenta* was frequent in small numbers over villages and forest. **Sermata** Either Glossy or Uniform Swiftlets were frequently observed over gardens and forest. **Leti** A few (Glossy) seen at the harbour on 25 September 2008, with one in 2010. **Kisar** At least 30 (Glossy). Swiftlets are poorly known in the region, but Uniform Swiftlet is known from Tanimbar, while both Glossy and Edible-nest Swiftlets are widespread in the Lesser Sundas (White & Bruce 1986), although there were no historical swiftlet records from Babar or Sermata.

ELEGANT PITTA *Pitta elegans vigorsii*

Babar (*vigorsii*) Heard and seen near *air besar* inland of Tapa (PV) and at least ten called at dusk and dawn at Liliana—one or two introductory notes followed by two slow-paced notes over 1.3 seconds at 1,300–2,600 Hz, and atypically a bird was sound-recorded (not in response to playback) giving a three-note call (XC138343). **Romang** (*vigorsii*) Two-note calls heard twice at dusk in coastal strand and tropical dry forest on Nyata Island, but not on mainland Romang. **Sermata** (*vigorsii*) First island records: up to seven heard shortly after dusk each night in forest edge and gardens, between sea level and 150 m, but none observed.

Call on Sermata a two-note slurred *wuu-whi* at 1,550–2,300 Hz with 0.4 seconds between notes (XC138520) similar to *vigorsii* on Damar (XC66888), Babar and Tanimbar. The two-note song of Lombok birds (*concinna*) has a similar minimum frequency (but higher maximum) compared to *vigorsii*. The main difference between *vigorsii* and *concinna* (based on recordings from Lombok, Flores, Pantar and Alor) is that the two notes are on even pitch in the former (0.2 kHz difference in *concinna*) and their slower pace creates a longer gap between notes (*c.*0.2–0.3 seconds in *vigorsii* vs. *c.*0.1–0.15 seconds in *concinna*) and an overall less-energised sound. Gill & Wright (2006) recognised *vigorsii* at species level (Double-striped Pitta) but most current authorities including Gill & Donsker (2013) consider it conspecific with Elegant Pitta. Morphological and vocal variation in *P. elegans* appears conservative and limited, but the three-note call of Sumba birds (*maria*), slow-paced calls of Banda Sea *vigorsii* and presence of migratory populations (*elegans*) on West Timor and Roti indicate noteworthy variation worthy of further taxonomic consideration. Vocal diversity consistently reflects subspecific limits. A recent molecular treatment that recognised up to 17 distinct species among populations of Red-bellied Pitta *Erythropitta erythrogaster* (Irestedt *et al.* 2013) highlights the capacity of insular *Pitta* taxa to speciate. New island records on Nyata and Sermata help define the Banda Sea distribution of *vigorsii*. The lack of records on Romang is surprising, although *vigorsii* has been suggested to prefer small islands in the Kai group (Johnstone & van Balen 2013). On nearby Timor, published records are all from the West. Birds on Damar and Tanimbar apparently resident (Bishop & Brickley 1998, Trainor 2007b) but those on Kisar pertain to the migratory *P. e. elegans* (White & Bruce 1986).

WALLACEAN CUCKOOSHRIKE *Coracina personata personata*

Romang Frequently heard from sea level to at least 400 m in gardens, *Eucalyptus* woodland, secondary and primary forest. Several photographed, including a pair on 17 October 2010, which appeared to be feeding juveniles. No nest observed, but the male held a large grub in its bill for c.6 minutes, before flying into a dense leafy canopy, indicating either that chicks were being fed or courtship behaviour (Fig. 5a). Song a sweet polyphonic whistled

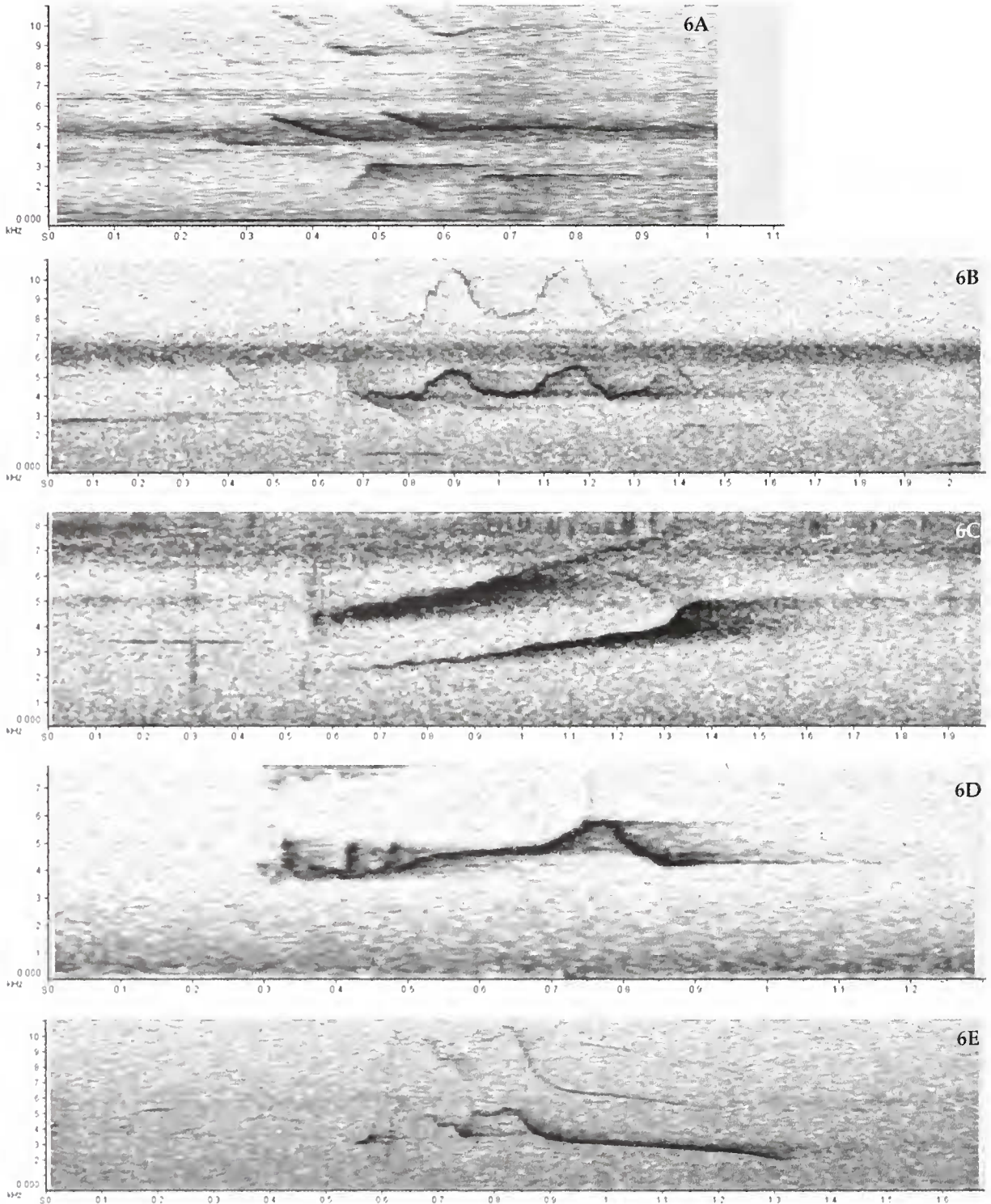


Figure 6. Sonogram of whistled song of Wallacean Cuckooshrike *Coracina personata* from (A) Romang, (B) Wetar, (C) Wetar, (D) Timor and (E) Alor. X-axis = time (0.1 seconds per tick), Y-axis = frequency (1 kHz per tick).

downslur, starting at 5,600 Hz ending at 4,800 Hz (XC139860; Fig. 6a) and distinct from the single sweet whistle on Wetar, which starts at 4,100 Hz and rises twice to 5,530 Hz (Fig. 6b), or sweet higher pitched upslurred whistle (2,200–7,000 Hz) also on Wetar (XC104566; Fig. 6c). On Timor a single whistle on mostly level pitch over 0.7 seconds (4,100–5,600 Hz) is typical (XC103150, Fig. 6d), and on Alor a downslurred whistle (XC105852) of three notes over 0.8 seconds (2,000–5,600 Hz) has been sound-recorded (Fig. 6e).

Wallacean Cuckooshrike is occasionally recorded as singles, pairs and threes on Timor, Alor, Wetar and Romang, but is never particularly common and is poorly known. It occurs in a wide range of tropical forests and savanna woodlands including *Eucalyptus*. Six endemic subspecies are currently recognised in Wallacea (Coates & Bishop 1997), but this treatment masks substantial morphological (Fig. 5a–d) between island populations, with species-level splits probably warranted. Morphologically, none stands out as particularly strong candidates, except dark-plumaged *pollens* (Kai), *unimoda* (Tanimbar) and perhaps the small-bodied, white-bellied *alfrediana* (Lembata and Alor) (Fig. 5). Bishop & Brickle (1998) nominated *pollens* (including *unimoda*) for species status. Vocal variation within islands, and among subspecies, remains poorly known despite documentation here. The species' apparent absence from Babar is surprising.

KAI CICADABIRD *Coracina dispar*

Babar None seen but a single low-pitched *weck* note sound-recorded near Liliana at 200 m was similar or identical (XC138341) to sound-recordings from Romang; record should be considered provisional. **Romang** One photographed in the subcanopy of degraded forest, surrounded by primary forest, on the slopes (400 m) of Mount Taur on 15 October 2010. At Lakuwahi, 1–2 sound-recorded daily, but not seen, in mosaic of tropical dry forest and *Eucalyptus alba* woodland at the edge of gardens at c.300 m. Contact calls were single, low-pitched (1,000–4,000 Hz) *weck* notes (XC138936, 138938–939) broadly similar to the *chuk* notes of Common Cicadabird *C. tenuirostris* (e.g. East Timor: XC32585) and Kai Cicadabird (Coates & Bishop 1997). These are repeated at 0.3–5.0-second intervals perhaps depending on level of agitation. Song previously undescribed: three moderately low-pitched, rasping, cicada-like notes, first a drawn-out double note at 1,220–2,930 Hz over 1.1 seconds, then a gap of 1.3–2.1 seconds before a single note on level pitch (XC138935, 138937). On three occasions individuals were followed for up to 200 m (over 5–20 minutes each) but were not observed, as they presumably kept ahead by flying through the canopy.

Endemic to several of the higher rainfall islands in the Banda Sea including Kai, Banda, Tanimbar and Damar (White & Bruce 1986) but is uncommon, inconspicuous and poorly known. Six specimens collected in the Kai Islands and on Romang (Hartert 1903, 1904), a 'fine series' on Damar (Hartert 1900) but only one on Larat (Tanimbar) (Bishop & Brickle 1998). Few recent records of singles and a pair from Kai (Mauro 1999, Johnstone & van Balen 2013) and Tanimbar, but not seen on Damar (Trainor 2007b) and Banda (Johnstone & Sudaryanti 1995). Recordings of its song may assist future surveys. Based on biogeography and habitat suitability, expected on Babar (suitable evergreen forest probably covers half the island) and on Sermata, and perhaps on Leti and Moa. Considered Near Threatened given its small global range and clearly small and fragmented populations (www.redlist.org).

WHITE-SHOULDERED TRILLER *Lalage sueurii*

Babar Common in gardens and secondary forest, with at least ten between Tepa and Letwurung. Birds photographed at Tepa had typical plumage (male pied, white eyebrow; female brownish above, whitish below). **Romang** An adult photographed and sound-recorded in *Eucalyptus alba* woodland at c.120 m on lower slopes of Mount Taur. Heard at

Hila village and frequent but surprisingly elusive around gardens at Lakuwahi to 320 m. **Leti** Common in open Lontar palm-dominated savanna, including around villages; pair with two fledglings photographed on 13 November 2010. Fledglings had orange bills, white underparts with patchy buff wash, a black-blotched breast and blackish wings with patches of buff. The adult male was typical of White-shouldered Triller. **Kisar** Small numbers at Wonreli village and the airport. In 2008, 13 were recorded (B. F. King *in litt.* 2009).

Widespread on Sulawesi and in the Lesser Sundas, including Wetar, Kisar, Luang, Sermata and Babar (White & Bruce 1986). Although previously collected on Sermata, none was recorded in 2010. The Leti record fills a distribution gap, although the species is listed for Moa and presumably also occurs on adjacent Lakor. Some morphological differences, but apparently little vocal variation between Lesser Sunda populations (XC131356, 116494, 138461, 139860). Few observed on Romang and only an aberrant-plumaged bird (showing progressive greying: van Grouw 2013) was photographed. The eight specimens from Romang are juveniles (Hartert 1904; P. Sweet, M. Shanley & T. Trombone *in litt.* 2012), which initially suggested (erroneously) to CRT that this population might represent an undescribed neotenic taxon. Details will appear elsewhere.

GREEN ORIOLE *Oriolus flavocinctus migrator*

Romang Common in regenerating gardens and secondary forest around Lakuwahi, but absent on Mount Taur. The low-pitched (500–2,300 Hz) song comprises three elements over 0.45 seconds, with a final downslurred note typical of Australian birds. Low-pitched and variable contact notes over 0.35 seconds were given singly at 3–4-second intervals (XC138948, 138950). Birds on Romang, Moa and Leti described by Hartert (1904) as *O. f. migrator*, which was considered different to Australian birds because the stripes and spots on the underparts are larger and yellow tips to the outer rectrices more obvious. However, most authors, except Gill & Donsker (2013), have not recognised this subspecies, yet photographs do show these minor differences (Fig. 7). Green Oriole occurs also on Aru and southern New Guinea (White & Bruce 1986). Kühn collected 20 specimens on Romang (Hartert 1904). None recorded on Leti, but presumably extant there and on Moa.

TORRESIAN CROW *Corvus orru latirostris*

Babar Singles and pairs heard daily, and occasionally seen, in mixed gardens, secondary forest and tropical forest up to 500 m (PV & CRT). Call usually a rapid low-pitched (1,000–2,000 Hz) double-noted *arr*, often given in duet between pairs, or similarly pitched but more drawn-out *arr-rr* notes over 0.5 seconds (AV8880–8881, XC138354–355). Vocalisations noted as 3–4 gargled nasal notes on Tanimbar (Coates & Bishop 1997). *C. o. latirostris*, which is endemic to Tanimbar and Babar, appears to be uncommon and sparsely distributed on Tanimbar (Bishop & Brickle 1998). The species is widespread in northern Australia, Papua New Guinea and northern Maluku (White & Bruce 1986). Bismarck Crow *C. insularis* has recently been recognised at species level (Dutson *et al.* 2011). Calls on Babar similar to those in Australia, indicating that some island populations are only relatively weakly differentiated.

LARGE-BILLED CROW *Corvus macrorhynchos macrorhynchos*

Romang Fairly common in ones and twos, with one photographed. A flock of 21 flew into Hila village to roost. **Sermata** Uncommon, with one seen on the coast and one heard at dusk around primary evergreen forest (120 m). The bird seen had a dark iris unlike Torresian Crow, which has a white iris. The song comprised low-pitched (1,500 Hz) *arr* notes over

0.2 seconds, with 0.65 seconds between notes, which is typical of Lesser Sunda populations (Coates & Bishop 1997). **Leti One** at Serwaru village on 11 August 2001, one heard on 25 September 2008, and one seen in Lontar palm-dominated savanna in 2010. **Moa Two** on the well-forested coast at Kaiwatu village on 11 August 2001. **Kisar** Recorded in 2001 (Trainor 2003), two seen in 2008 (B. F. King *in litt.* 2009) and frequently seen and heard in 2010, with several near the airport, including one photographed being mobbed by Grey (Kisar) Friarbird *Philemon kisserensis*. Collected historically on Kisar. Widespread in the Lesser Sundas, except on Damar (Trainor 2007b) with these new island records clarifying its south-easternmost limits.

ORANGE-SIDED THRUSH *Geokichla peronii audacis*

Babar Common and frequently heard in all habitats except villages; many seen and several photographed in gardens and secondary forest near Tapa attesting to its relatively confiding behaviour (PV & CRT). **Romang** Observed at Hila cemetery in 2001; in 2010 frequently heard singing (XC139851) in gardens, secondary and primary forest from sea level to at least 550 m, with one photographed. **Sermata** Vocalised infrequently, with three heard singing in evergreen forest, one photographed in evergreen forest, and at least one singing in coastal strand vegetation (XC138519). Song a complex series of at least seven phrases often comprising four whistles followed by a high-pitched, buzzy *kseeert* note (6,500–9,000 Hz). *G. p. audacis* occurs in East Timor, Wetar, Babar, Romang and Damar (Coates & Bishop 1997) and was expected on Sermata. It presumably also occurs on Leti, Moa and Luang. Despite its Near Threatened status, appears to be under no threat of extinction, being common in a wide range of habitats and there seems to be no trade beyond West Timor, Roti and probably Semau.

SUNDA THRUSH *Zoothera andromedae*

Romang One in secondary forest at c.280 m. A high-pitched song was heard prior to the observation—a downslurred *psee* commencing at 10,300 Hz that descends to 7,300 Hz over 0.8 seconds (XC139694). Such very high-pitched calls are typical of many thrushes including Orange-sided and Chestnut-backed Thrushes *Z. dohertyi* on Timor (J. Eaton *in litt.* 2011) making attribution of this vocalisation to Sunda Thrush provisional. A recording of Sunda Thrush in the Philippines (R. Hutchinson unpubl.) is substantially longer (2.1 seconds) but otherwise similar (9,700 Hz to 6,700 Hz). One of the most skulking and elusive Asian thrushes. Just two were collected by Kühn on Romang (Hartert 1904), suggesting that they were also elusive in 1902. The lack of morphological divergence among Sunda Thrush populations throughout its range suggests that colonisation has been rapid and recent.

PIED BUSH CHAT *Saxicola caprata*

Babar (*cognatus*) Common in gardens and roadside habitats throughout (PV & CRT), with both sexes photographed and sound-recorded (XC138362) at Tapa. A female in Tapa was blind in one eye. **Romang** (*pyrrhonotus*?) A few pairs at edge of gardens or in Hila village (0–340 m) and a female photographed after being hand-caught roosting on a rocky overhang in early evening. **Kisar** (*pyrrhonotus*?) One of the commonest birds throughout including in Wonreli village, gardens and savanna woodland. Adult female photographed (28 October 2010) feeding a cricket to juveniles calling from a nest in Lontar palm leaves. A female fed male and female fledglings (buzzy begging notes: XC138465) at Wonreli on 29 October (Trainor 2012). In 2008, 24 were recorded (B. F. King *in litt.* 2009). First records for Romang, where apparently uncommon and perhaps a recent colonist, as the species is generally obvious and is unlikely to have been overlooked during the collecting era.



Figure 7. Green Oriole *Oriolus flavocinctus*: (A) Romang *O. f. migrator* and (B) *O. f. flavocinctus* Darwin, Australia, 30 November 2010 showing slight morphological differences (Colin R. Trainor)

Figure 8. Rufous-sided Gerygone *Gerygone dorsalis fulvescens* on Romang: (A) juvenile being fed a large insect by adult and (B) fledgling (Colin R. Trainor)

Romang represents the eastern limit of the range of *S. c. pyrrhonotus*. Apparently absent on Leti and Sermata.

RUFOUS-SIDED GERYGONE *Gerygone dorsalis*

Babar (*fulvescens*) Photographed (PV) and occasionally heard in all habitats from degraded secondary forest to primary forest above Liliana at c.650 m (PV & CRT). **Damar** (*kuehni*) One near Wulur on 24 September 2008. **Romang** (*fulvescens*) Frequent in wide range of habitats including thicket-like regenerating gardens, secondary and primary forest. A juvenile (orange gape, broad yellowish eye-ring, cream underparts, pale grey head and predominantly grey back washed pale brown) was photographed being fed by an adult on 24 October 2010 (Fig. 8a). About 50 m away on the same date, a fledgling (Fig. 8b) had strikingly different markings (dark eye, remains of white gape patch, broad whitish eye-ring suffused yellow, grey crown and nape, and white underparts suffused grey and rufous) to adults, which have reddish-brown irides and brown or rufous upperparts, making field identification difficult. **Sermata** (*fulvescens*) Common in all habitats with up to ten daily and several photographed. Song a series of up to 31 uneven-pitched, warbled notes at 600–4,700 Hz (XC138527–529) and in contact a series of squeaky notes at 1,800–4,800 Hz that rise and fall in pitch (XC139669). Song similar on Damar (XC66899) and can last for >1 minute. Song on Kai described as ‘a complex jangle of unhurried notes with a slight warbled quality’ (Coates & Bishop 1997) which matches birds on Romang, Sermata, Kisar and Leti. **Kisar** (*fulvescens*) Heard in Wonreli town and common in coastal savanna, where foraged in *Ziziphus* sp. trees. Overlooked in 2001 (Trainor 2003), but eight seen in 2008 (B. F. King *in litt.* 2009). **Leti** (*fulvescens*) Present on 11 August 2001 and in 2010 was common in village of Serwaru, savanna woodland and secondary forest. **Moa** (*fulvescens*) Two at Kaiwatu village on 11 August 2001.

Endemic to islands in the Banda and Flores Seas (White & Bruce 1986). All of the few recent surveys in its range have found the species to be common and widespread (Dutson 1995, Coates & Bishop 1997, Bishop & Brickle 1998, Trainor 2007b), except on the Kai and Tayandu islands (Johnstone & van Balen 2013). Birds on Romang were originally described as endemic *G. d. sequens*, based on the upperparts ‘being more richly coloured, the back and the wings more tinged with cinnamon rufous ... and the young are also yellow underneath’ (Hartert 1904). These differences are minor, as there appears to be limited morphological (and probably vocal) variation among populations on the Banda Sea islands.

TIMOR STUBTAIL *Urosphena subulata*

Babar (*advena*) Heard at sea level on the Tapa–Letwuring road, commonly sound-recorded (PV & CRT) and observed once in forest at *air besar* near Tapa (PV) and at Liliana up to c.650 m (CRT). **Romang** (undescribed) Frequent in secondary and primary forest, and regenerating gardens, at 0–550 m. Song a single high-pitched (7,560–9,000 Hz on Babar, XC137921; 8,055–9,276 Hz on Romang, XC137924) upslurred *pssseer* over 1.2–1.3 seconds (Babar) or 1.6 seconds (Romang), with the same structure as on Timor, Roti (XC32715, 32713), Atauro (XC140163), Alor (XC140159) and Wetar (XC140162; Fig. 9a–k). Pitch varies slightly between islands (min. 7,974–8,706, and max. 8,950–9,357 Hz) and song length varies substantially (apparently with island area) from 0.99 seconds on Timor (31,000 km²), to 2.02 seconds on Atauro (150 km²). Contact or alarm notes on Babar comprise at least 4–5 rapidly produced, high-pitched notes (7,400–9,300 Hz, AV9071, XC137921) over 0.35 seconds, producing a twittering sound. On Romang contact notes similar to those on Babar in pitch (8,800–9,500 Hz, XC137924), over 0.2 seconds, but mostly level without

rapid changes in frequency. On Wetar contact calls higher pitched, long, single notes (8,500–9,800 Hz; 0.25 seconds), sometimes repeated, (XC140161; Fig 12j). The Babar records are the first since specimens in 1905, and the Romang records the first ever. The mouse-like behaviour of this tiny forest bird belies its capacity to colonise islands. New island records for Atauro (Trainor & Soares 2004), Roti (Trainor 2005b) and Alor (Trainor *et al.* 2012) have greatly improved knowledge of its distribution, but little progress has been made clarifying the distinctiveness of these populations, though songs appear to vary relatively little. Sonograms of call notes on Romang and Babar are consistently different to those from Wetar and Atauro (Fig. 9), and there does appear to be differences in upperparts coloration among the various island populations (Fig. 10a–c) perhaps suggesting that more taxa could be recognised. A molecular approach will be important to clarify the taxonomic status of the island forms. Following discovery on Babar, Hartert (1906a) predicted its occurrence on the islands between Timor and Babar. It is absent from Sermata and appears to be absent from Damar (Trainor 2007a) and Leti.

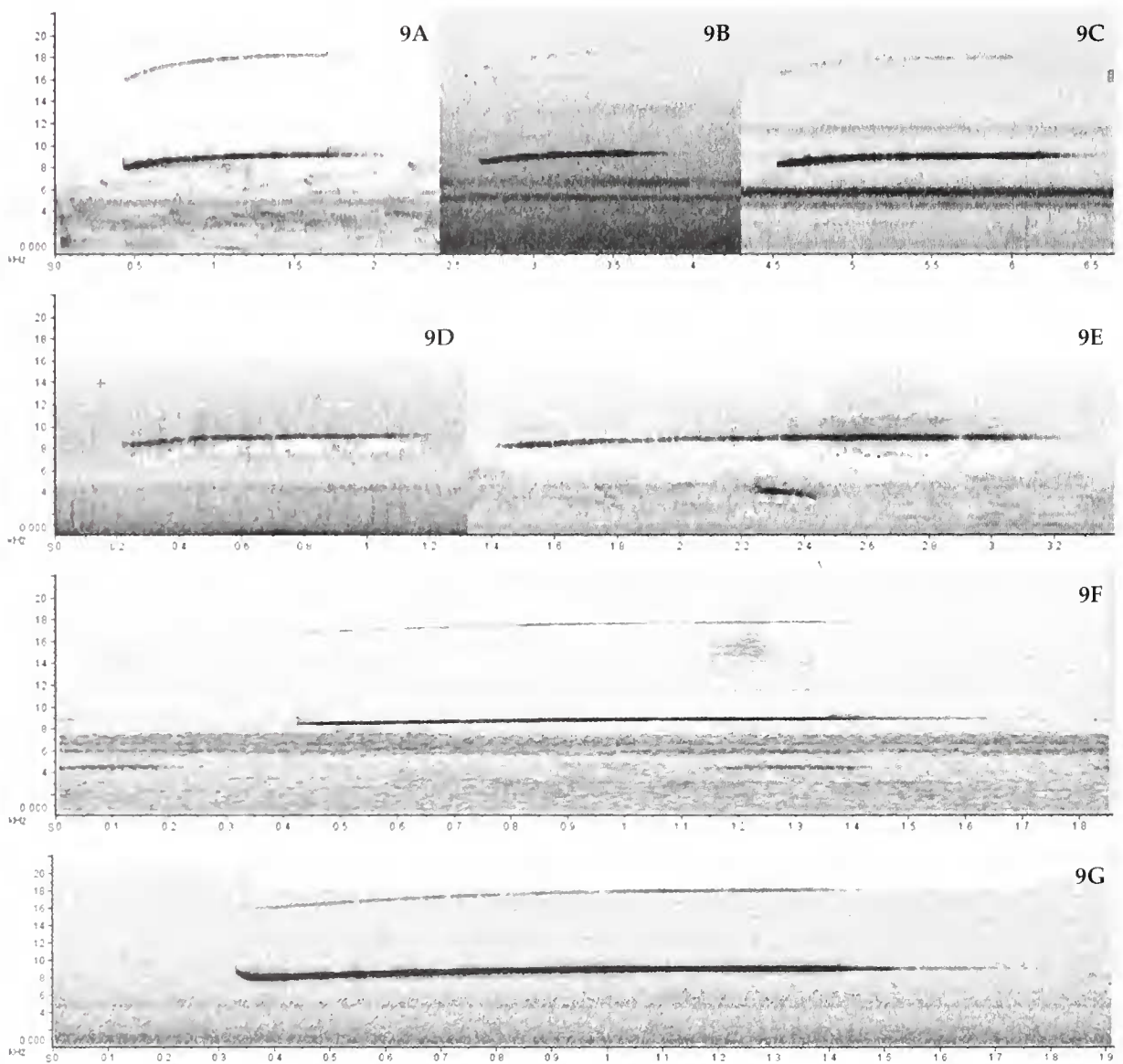


Figure 9. Sonograms of Timor Stubtail *Urosphena subulata* songs: (A) Romang (XC137923–925), (B) Wetar, (C) Atauro, (D) Timor, (E) Roti, (F) Alor, (G) Babar (XC137921)

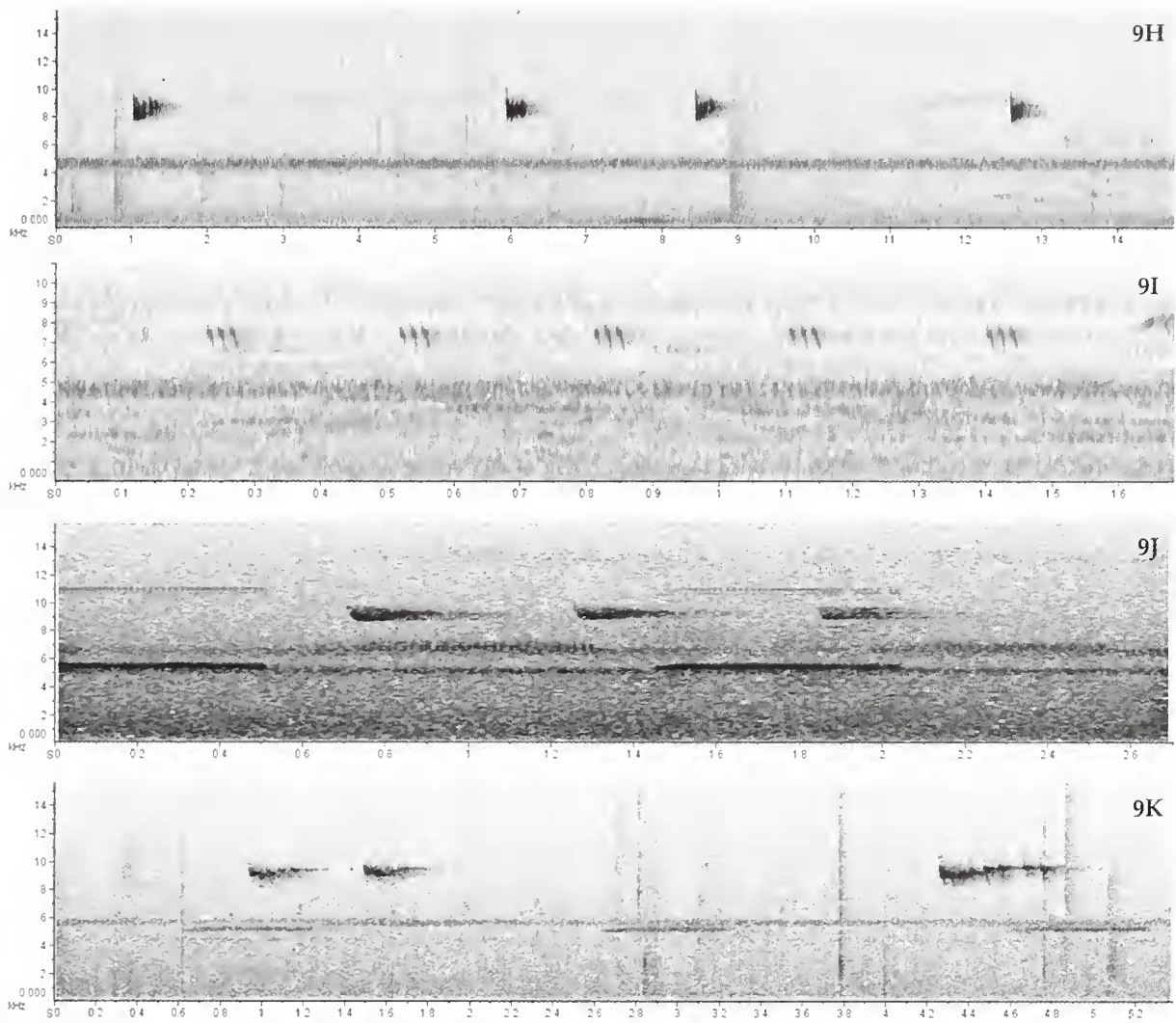


Figure 9 (cont.). Sonograms of Timor Stubtail *Urosphena subulata* songs: (H) Babar (contact notes, XC137922), (I) Romang (contact notes, XC137924), (J) Wetar (three contact notes) and (K) Atauro (contact notes). X-axis = time (variable, 0.1–0.5 seconds per tick), Y-axis = frequency (2 kHz per tick).

GOLDEN-HEADED CISTICOLA *Cisticola exilis lineocapilla*

Babar Occasionally sang from grassland and shrubs at Tapa (PV & CRT) and Letwuring. **Sermata** Males in breeding plumage regularly sang at the edge of gardens and in scrub, with several photographed. Song a series of tonally complex, rasping, burred 'wheezing' notes at 1,500–9,500 Hz, at intervals of 0.7–1.2 seconds (XC138530). A lower pitched (1,700–7,400 Hz) and slightly differently structured *whee* also sound-recorded. These did not include the low-pitched second or third *plio* / *pzick* note, typical of birds on Sulawesi and mainland Asia (Coates & Bishop 1997; www.xeno-canto.org). Not seen on Romang (where previously collected), but widespread in Wallacea and much of South-East Asia.

SNOWY-BROWED FLYCATCHER *Ficedula hyperythra audacis*

Babar Frequently heard and occasionally seen (sound-recorded and photographed) in secondary and primary tropical forest at *air besar* (FV) and Liliana at c.200–650 m (CRT). Call a high-pitched single, double or triple note at 6,000–7,800 Hz (XC137942–943). No songs heard. A female was sound-recorded giving high-pitched (7,000–9,000 Hz), rapid twittering notes. Contact calls on Wetar (the geographically most proximate population) are higher pitched than on Babar (7,000–9,500 Hz) and comprise single high-pitched notes



Figure 10. Drab (grey-) brown plumage of Timor Stubtail *Urosphena subulata*: (A) Romang (undescribed), (B) Babar (*U. s. advena*) contrasting strongly with bird from (C) Timor (*U. s. subulata*) showing rusty-brown upperparts, perhaps partly because of differences in lighting in dark understorey.

Figure 11. Snowy-browed Flycatcher *Ficedula hyperythra audacis* on Babar is morphologically similar to many other subspecies, despite its relative isolation and novel lowland habitat use: (A) male; (B) female at Liliana; (C) male from Wetar cf. *F. h. clarae*; and (D) female *F. h. clarae*, Mount Mutis, West Timor, showing grey upperparts (Colin R. Trainor)

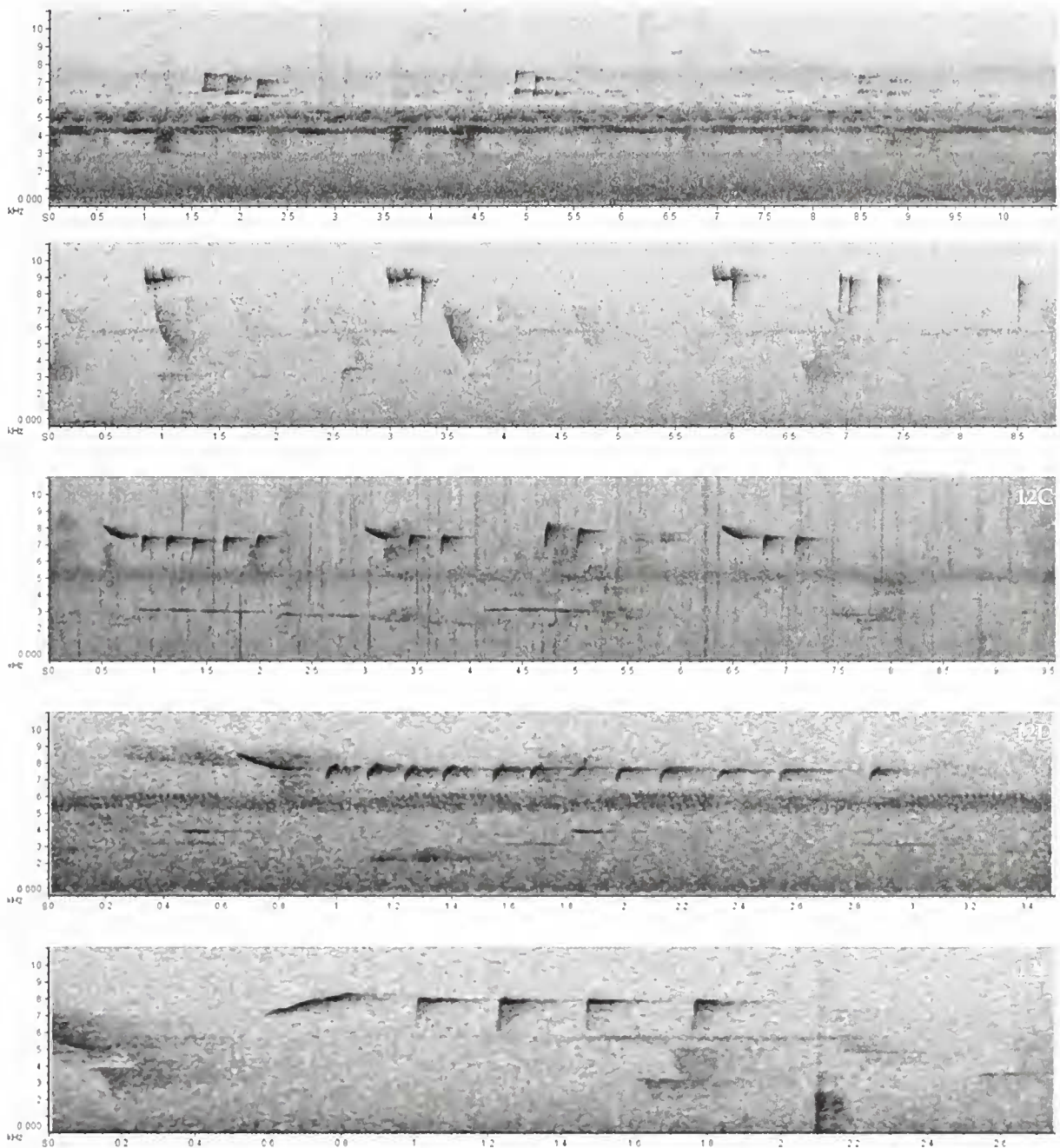


Figure 12. Sonograms of Snowy-browed Flycatcher *Ficedula hyperythra*: (A) Babar, *F. h. audacis*, (B) Wetar, (C–D) Mount Mutis, West Timor, *F. h. clarae* (songs) and (E) Wetar (probable song). X-axis = time (variable, 0.2–0.5 seconds per tick), Y-axis = frequency (1 kHz per tick).

(*swik*) or rapid double or triple notes over 0.2–0.5 seconds (XC137940). On Wetar the song is apparently 5–6 rapid, high-pitched notes (at 8,100–7,500 Hz, over 1.0 second) that descend in pitch from the first note (XC137940, 137945). That on nearby Timor is a single, rapid, high-pitched (5,500–8,000 Hz) series of *swik* notes that produces a different shape on sonograms to notes on Babar and Wetar (Fig. 12). On Timor the song (XC140165–166) usually comprises an introductory high-pitched downslur that starts at 8,000 Hz and ends at 7,300 Hz over 0.2 seconds, followed by 2–16 high-pitched (7,300–7,600 Hz) notes that descend then ascend in pitch (over 0.7–3.0 seconds).

Snowy-browed Flycatcher occurs from the Himalayas and across South-East Asia, with 22 generally recognised subspecies (Gill & Donsker 2013), including seven endemic to Wallacea (White & Bruce 1986). A population recently discovered on Wetar (CRT unpubl.) is undescribed, but is probably close to *F. h. clarae* of Timor. Males on Babar are similar in appearance to those on Wetar (Fig. 11). Usually strictly montane (above c.1,000 m), on Babar the species occurs in the lowlands, perhaps down to sea level in forested areas. Still common on Babar (but absent from more degraded forest near the coast) and regionally is common on Mount Mutis (West Timor), several mountains in East Timor including Mt Mundo Perdido and Mt Ramelau (Trainor *et al.* 2008; CRT unpubl.) and is probably widespread in the mountains of Wetar (CRT unpubl.). The presence of numerous described subspecies, substantial genetic (Outlaw & Voelker 2006), vocal (www.xeno-canto.org) and morphological variation (www.orientalbirdimages.org) suggests that some taxa may be recognised specifically in the future.

BLACK-BIBBED MONARCH *Symposiachrus mundus*

Babar Frequently heard, sound-recorded (XC138348–351) and occasionally photographed in highly degraded secondary forest, clumps of trees in agricultural land (PV & CRT) and tropical forest to at least c.650 m. Endemic to Babar, Damar and the Tanimbar Islands (White & Bruce 1986). A common member of mixed-species flocks on Tanimbar (Bishop & Brickle 1998). On Damar, it was overlooked during a survey in 2001 (Trainor 2007a,b) but was seen in 2011 (Eaton & Hutchinson 2011). Black-bibbed Monarch occurs in highly degraded secondary forest and is under no threat of extinction anywhere within its range.

BROAD-BILLED FLYCATCHER *Myiagra ruficollis ruficollis*

Romang Few records and appeared uncommon, in regenerating gardens and secondary forest, and also present on Nyata Island. Three different notes sound-recorded: a two-note whistle of different pitch (*wee-oo*), typical rasping *bzzzsh* notes, and *weee-eer* notes at 2,000–3,600 Hz. The latter are higher pitched than on Timor (XC139685–686). Common on Timor, especially around water, and present on Sumba, Sabu, Roti, Timor, Alor, Lembata, Wetar and Damar in the Lesser Sundas (White & Bruce 1986). Vocal diversity among the various subspecies poorly documented in Wallacea and merits additional work.

ARAFURA FANTAIL *Rhipidura dryas*

Babar (*reichenowi*) Common in all habitats, except village, below 650 m (PV & CRT). **Romang** (*elegantula*) Observed on the coast in 2001; in 2010 it was common in all wooded habitats to at least 400 m, as well as at Hila village and on Nyata Island (XC140290). One photographed finalising a nest in evergreen forest at c.250 m on 20 October 2010. The nest was just 2.5 m above ground in a 15-m tall forest tree and was constructed entirely of dry grass (Fig. 13c). **Sermata** (*elegantula*) Common throughout including village. **Leti** (*elegantula*) Frequent in village gardens at Serwaru, savanna woodland and forest. **Damar** (*elegantula*) Pair in secondary forest on 24 September 2008. The only published field information on *elegantula* was from Damar, where it was widespread in 2001 (Trainor 2007b). Observations on Romang and Leti confirm that *R. dryas* is typically one of the most widespread and frequently encountered birds in wooded habitats in the south-west islands. Birds on Leti and Sermata appeared identical, with a white forehead, but those on Romang had a buff forehead (Fig. 13a–d). Song on Romang and Sermata is a relatively weak series of 6–8 jangling notes (XC139863, 138534), similar to that on Damar (XC66900), Timor, Wetar and adjacent islands (Coates & Bishop 1997). Recently split from Rufous Fantail *R. rufifrons*, *R.*



Figure 13. Arafura Fantail *Rhipidura dryas* shows subtle morphological variation in the south-west islands, with *R. d. reichenowi* on Babar (A) having a rufous-cinnamon forehead; *R. d. semicollaris* on Timor (B) has rich rufous above the eyes and duller brown head; *R. d. elegantula*, on nest on Romang (C) has buff forehead, and birds on Sermata (D) a white forehead (Colin R. Trainor)

Figure 14. Northern Fantail *Rhipidura rufiventris hoedti*: (A) on Sermata has white belly and vent, rather than buff belly; (B) fledgling on Sermata with yellow gape patch, downy feathers on rump, brown markings on blackish primaries, and blotchy breast suffused grey and buff; (C) on Romang has well-defined white-spotted grey breast, and no supercilium; and (D) *R. r. pallidiceps* on Wetar has cream breast streaked grey and white supercilium (Colin R. Trainor)

dryas includes seven subspecies in Wallacea (Boles 2006, Gill & Donsker 2013). Overlooked by collectors on Sermata (Hartert 1911a) and remarkably *Rhipidura* is absent from Kisar.

NORTHERN FANTAIL *Rhipidura rufiventris hoedti*

Romang Frequent in all wooded habitats, including regenerating gardens, to at least 400 m. **Sermata** Recorded daily in gardens and tropical forest. One photographed in evergreen forest held an adult dragonfly for several minutes and presumably was feeding young. Adults had a white rather than buff belly (Fig. 14). A fledgling photographed on 5 November 2010 had black irides, orange gape, cream throat suffused buff, brown breast suffused buff, cream belly washed buff, blackish wings with patches of buff, and traces of down on the rump, wings and belly (Fig. 14b). The song included at least 14 tonally complex downslurred notes at 1,500–3,000 Hz over *c.*4 seconds (XC138521). **Leti** One photographed on a Lontar palm in open savanna. **Moa** Two in woodland at Kaiwatu on 11 August 2001. **Damar** Two in secondary forest on 24 September 2008. The only other recent records of *R. r. hoedti* were on Damar, where it was widespread (Trainor 2007b). This subspecies (of which the name *buettikoferi* is a synonym) has well-defined white spotting on the grey breast (Fig. 14). *R. rufiventris* is widespread in the Lesser Sundas and Maluku, with the nine endemic subspecies found in most wooded habitats including garden edge (Coates & Bishop 1997). Extensive vocal and genetic analyses are needed to understand the taxonomy of this group (Rheindt & Hutchinson 2007).

CINNAMON-TAILED FANTAIL *Rhipidura fusciorufa*

Babar Frequently observed, sound-recorded and photographed (PV) in all habitats, except village, to at least 650 m (CRT). Endemic to Yamdena, Larat and Selaru in the Tanimbar archipelago, and Babar (Coates & Bishop 1997). Few differences in habitat use between this species and *R. dryas*, which occur in syntopy. *R. fusciorufa* perhaps prefers greater tree cover and forages higher than Arafura Fantail. Both are frequent to common on Babar.

YELLOW-THROATED WHISTLER *Pachycephala macrorhyncha*

Babar (*sharpei*) Several in tropical forest near *air besar* (PV). **Romang** (*par*) Relatively elusive in secondary and primary forest: *c.*90% of whistlers observed were Wallacean Whistler *P. arctitorquis*, which is more confiding (Kühn collected eight Yellow-throated Whistlers vs. 38 Wallacean Whistlers). Photographed on 14–26 October 2010 (Fig. 16) at the edge of secondary forest and gardens, at *c.*300 m. Birds on Romang have a buff breast and belly, while *P. m. compar* has a white throat that contrasts little with the breast and belly (Hartert 1904). **Leti** A whistler heard in evergreen forest along a stream was not identified to species or sound-recorded. Only *P. macrorhyncha* has been collected on the island. Those on Romang (*P. m. par*) and Leti and Moa (*P. m. compar*) are ‘hen-feathered’ birds; ours are the first field observations of *par*. *P. m. par* (Fig. 15) is vocally distinctive compared to *P. m. calliope* on Timor. Combined with the distinctive morphology, including absence of a yellow throat, this suggests that the hen-feathered taxa might be recognised specifically. Vocal comparisons with typical-plumaged birds on Damar (*dammeriana*) and Babar are required.

WALLACEAN WHISTLER *Pachycephala arctitorquis kebirensis*

Babar Frequently photographed and sound-recorded in woodland, secondary and primary forest (PV & CRT). **Romang** Observed on the coast in 2001. In 2010 this was one of the commonest birds in all wooded habitats including regenerating gardens and garden edge to at least 550 m, and was heard on Nyata Island. A nest in construction, at the edge of a garden on 22 October 2010, was a cup *c.*12 cm in diameter by 12 cm deep, constructed of

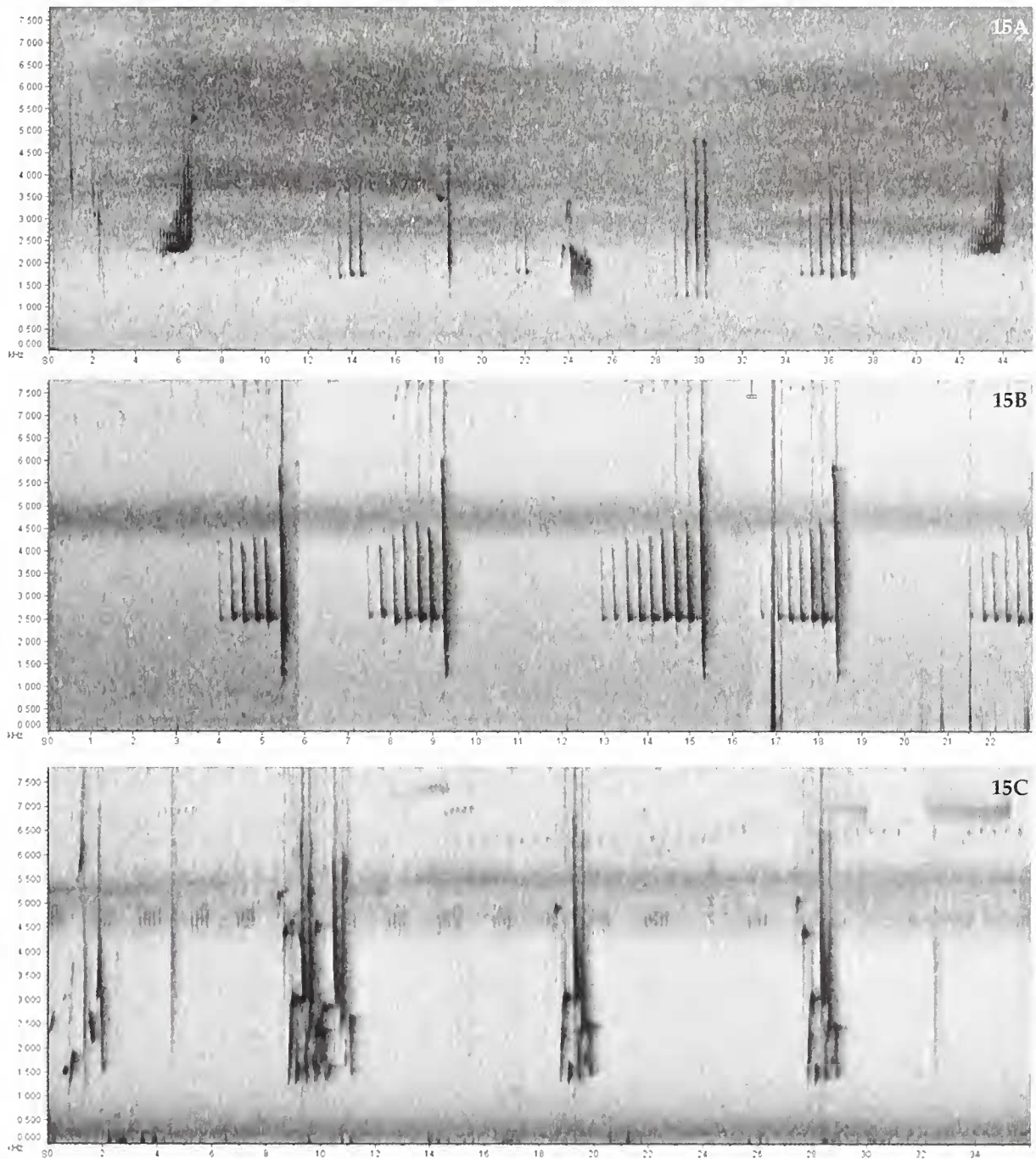


Figure 15. Sonograms of calls and songs of Yellow-throated Whistler *Pachycephala macrorhyncha par* on Romang and *P. m. calliope* on Timor: (A) fast-paced song and *chong* notes (*par*); (B) fast-paced song and *chong* notes (*par*); (C) rapid complex song, Lore, East Timor, 4 June 2005. X-axis = time (1–2 seconds per tick), Y-axis = frequency (0.5 kHz per tick).

thin grass stems and twigs, and c.2.2 m above ground in a small tree (Fig. 17a). A single white egg was present on 26 October. A juvenile male was photographed on 16 October, with a partial black breast-band and incomplete black cap. **Sermata** Not collected in 1906, but proved to be one of the commonest passerines with several photographed. Heard frequently in evergreen and dry forest, less commonly in coastal strand and regenerating gardens. **Damar** Two in scrub near Wulur on 24 September 2008.

Typical of the genus, this whistler has an extraordinary range of vocalisations (e.g. Fig 18; AV8983, XC38230, IBC), but overall variation is poorly documented. Common on Damar



Figure 16. Distinctive hen-feathered Yellow-throated Whistler *Pachycephala macrorhyncha par* on Romang (and *compar* on Leti and Moa) has cream throat and substantially different vocalisations to other members of 'Golden Whistler' complex (Colin R. Trainor)

Figure 17. (A) Male Wallacean Whistler *P. arctitorquis kebirensis* at nest on Romang, (B) female on Sermata with white underparts and relatively limited streaking, (C) lateral view of female (immature?) on Sermata with apparently mostly clean white underparts, but streaking perhaps obscured, and (D) female on Romang with extensive buff wash to underparts, and streaking (Colin R. Trainor)

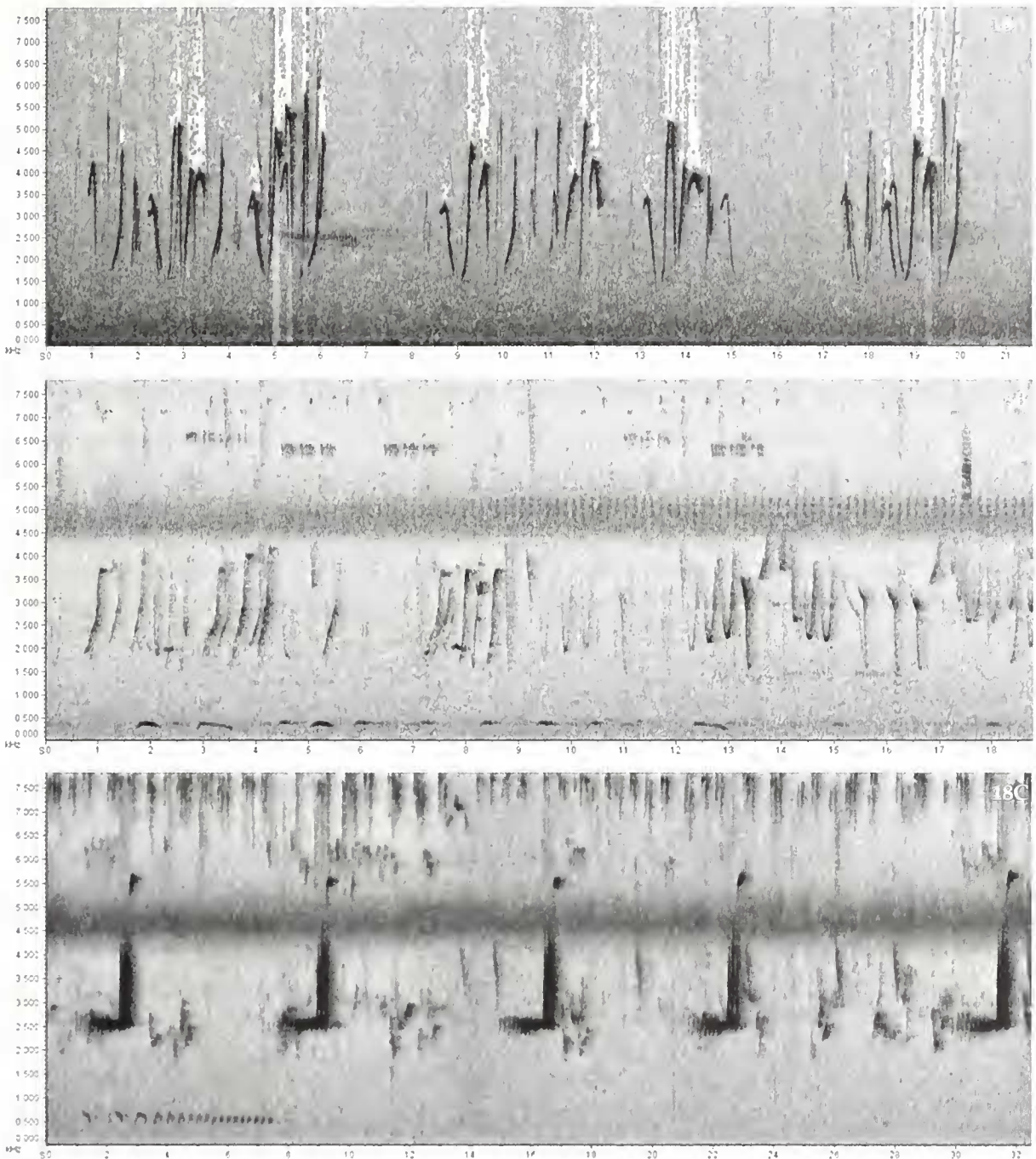


Figure 18. Sonograms of complex vocalisations by Wallacean Whistler *Pachycephala arctitorquis*: (A) song at Tapa, Babar, 23 August 2009 (AV8984); (B) song at Mount Taur, Romang, 16 October 2010; (C) call (?) at Lakuwahi, Romang, 20 October 2010. X-axis = time (1–2 seconds per tick), Y-axis = frequency (0.5 kHz per tick).

(Trainor 2007b), Romang and Sermata, where tolerant of substantial habitat modification and found in all wooded habitats including edge of gardens. Yellow-throated Whistler often shows stronger affinity with primary forest. Females on Romang and Sermata were initially misidentified as female Yellow-throated Whistler; the heavy, conical bill of Wallacean Whistler is the most distinctive feature (Fig. 17). Also common on Yamdena, where represented by *P. a. arctitorquis* (Coates & Bishop 1997), but surprisingly Tayandu

P. a. tianduana is known only from the five-specimen type series, and may be extinct (Johnstone & van Balen 2013). Remarkably, whistlers are absent from Kisar.

LONG-TAILED SHRIKE *Lanius schach bentct*

Sermata Regular in small numbers, and photographed, in coastal savanna and scrub around gardens. A fledgling with yellow gape patches, short tail and brown rather than black tertials was photographed on 5 November. An adult was close to a stick nest (120 × 150 mm) in a small tree 4.5 m above ground, but unclear whether it had eggs or was still building. The adult had a more extensive black eye-patch than shown in Coates & Bishop (1997), above and behind the eye, and the wing was black with no white. Call a tonally complex, buzzy low-pitched (900–4,000 Hz) squawk at c.1.25-second intervals (XC138523–524) similar to recordings from Bali (XC31386). **Kisar** Occasional in savanna woodland near the airport, with two recorded in 2008 (B. F. King *in litt.* 2009). *L. schach* is randomly distributed in the Lesser Sundas. Its absence from Flores is odd, as is its apparent absence from the dry savanna of Leti. Unrecorded on Sermata in 1906 (Hartert 1911a), it has either recently colonised the island, perhaps due to the conversion of coastal forest to woodland, or was earlier overlooked. This is a substantial range extension, with the nearest populations on Kisar and East Timor, 120 km to the west. Also present in Papua New Guinea (White & Bruce 1986).

GREY (KISAR) FRIARBIRD *Philemon kissereusis*

Leti Common in coastal savanna woodland especially where dominated by Lontar palms, occasionally observed at village edge but unrecorded in secondary tropical forest. A total of c.10 seen, all singles. **Kisar** Common and widespread in all habitats (especially Lontar palm savanna and regenerating gardens) including Wonreli village and elsewhere around habitation. Frequently seen feeding on flowers of Lontar palm. A nest was found 3.5 m above ground in a prickly *Acacia nilotica* near the airport on 11 October 2010. Constructed of grass, twigs and cobweb, it was c.12 cm wide and 10 cm deep. Two adults attending the nest were photographed and their contact calls recorded. Nearby an adult mobbed a Large-billed Crow suggesting that the latter may predate young friarbirds. In 2008, 52 were recorded (B. F. King *in litt.* 2009). Often considered a subspecies of Little Friarbird *P. citreogularis* (Coates & Bishop 1997), but based on biogeography (e.g. Timor Friarbird *P. inornatus* has long been split from Little Friarbird; *cf.* Mayr 1944) is frequently recognised as a species (Sibley & Monroe 1990, Gill & Donsker 2013). Unlike Timor Friarbird, Kisar Friarbird bears a strong resemblance to Australian *citreogularis*, having similar bluish-black facial skin, and neck to belly spotted brown. White & Bruce (1986) stated ‘the pale whitish grey fore-neck spotted with white appears distinctive’, but this difference is less obvious in life (Trainor & King 2011). The call of Kisar Friarbird is a rapid, low-pitched *oo-lup*, similar to Australian *citreogularis* (Trainor & King 2011). Greater sampling of contact notes and songs, and perhaps genetic data, are needed to clarify the distinctiveness of this taxon.

BANDA MYZOMELA *Myzomela boiei annabellae*

Babar Common in most wooded habitats from degraded agricultural land to *Melaleuca* woodland and tropical evergreen forest, at sea level to c.300 m (PV & CRT). Song a moderately low-pitched twitter with two or three strong introductory notes (2,750–4,570 Hz) followed by up to 14 even-pitched trilled notes over 0.7–1.2 seconds (AV8964–65, XC138359–360). Considered moderately common in a similar range of habitats on Yamdena (Bishop & Brickle 1998) and Banda Neira in the Banda Islands (Johnstone & Sudaryanti 1995). Part of a complex superspecies formerly lumped within Scarlet Honeyeater *M.*

sanguinolenta (White & Bruce 1986) together with Sulawesi Myzomela *M. chloroptera* and Wakolo Myzomela *M. wakoloensis* (Coates & Bishop 1997, Gill & Donsker 2013). The status of these Wallacean taxa, and recently discovered insular populations, is unclear (Rheindt 2010, Rheindt *et al.* 2010, Trainor *et al.* 2012) and needs review. Banda is 350 km distant from Tanimbar and Babar, and including all of these taxa within *M. boiei* may require further consideration.

SCALY-BREASTED HONEYEATER *Lichmera squamata*

Babar Abundant in all habitats from villages at sea level to evergreen tropical forest to at least 650 m (PV & CRT). **Romang** Noted in 2001. In 2010 it was probably the commonest bird, being recorded in Hila village, gardens, *Eucalyptus* woodland, primary and secondary forest from sea level to at least 550 m. Common also on Nyata. A fledgling with yellow gape patches and plain olive-grey underparts, rather than heavily 'scaled' chest and belly, was photographed in coconut trees at Lakuwahi on 23 October 2010. **Sermata** Although not previously recorded, this Banda Sea endemic was the most vocal bird on the island and common in all habitats. **Leti** Abundant at Serwaru village on 11 August 2001 and recorded near the harbour in 2008. Common in all habitats from village, savanna woodland and secondary tropical forest. Widespread and common or abundant on Damar (Trainor 2007b), but mostly restricted to coastal lowlands on Wetar, where it is common (CRT unpubl.), and surprisingly absent from Kisar, which lacks nectar-rich *Eucalyptus* woodlands and extensive tropical forest (an unconfirmed record of Indonesian Honeyeater *L. limbata* was made on Kisar: Appendix 1). In the Kai group considered scarce except on the small islet of Er (Johnstone & van Balen 2013). Wide range of vocalisations (www.xeno-canto.org) given throughout much of the day. Presumably also present on Lakor, Kelapa and most unvisited small islands.

BLUE-CHEEKED FLOWERPECKER *Dicaeum maugei*

Babar (*salvadorii*) Common in all habitats from village, gardens, tropical secondary forest and evergreen tropical forest (PV & CRT). Fledgling (bright orange gape patches and orange bill except grey tip) photographed in Tapa on 15 August 2012. **Romang** (*maugei*) Frequent in secondary and primary forest, gardens and *Eucalyptus* woodland from sea level to at least 350 m. Kühn collected 27 specimens (Hartert 1904). Greater similarity in song of birds from Babar and Romang than Wetar (*maugei*), despite the subspecific differences in populations on the former islands. On Babar the song (XC138361) comprises 3–4 high-pitched notes at 6,500–8,100 Hz, over 0.7–0.9 seconds, while on Romang (XC139854–855) it is 3–4 notes at 6,900–7,400 Hz, over *c.*1 second. On Wetar (*maugei*) the song includes three pairs of higher pitched notes at 6,400–9,000 Hz, delivered over *c.*1.7 seconds. **Damar** (*maugei*) Heard in secondary forest on 24 September 2008. Those on Romang were originally described as an endemic subspecies, *D. m. romae*, but the described differences from Timor *maugei* (abdomen yellowish cream, vs. white with creamy tinge) are slight (White & Bruce 1986). *D. m. salvadorii* was described for those on Moa and Babar, which mostly lack a black breast-band (Hartert 1906a). Perhaps typical of some of the random distributions on Banda Sea islands, flowerpeckers have yet to be recorded on Leti, Luang (Hartert 1911c) or Sermata, and they appear to be genuinely absent from the first- and last-named. Habitat appears suitable on these islands, but their absence may reflect area requirements, particularly where isolated from large source islands. Few published breeding records but Noske (2003) noted juveniles on Timor in December, April and May (wet season).

ASHY-BELLIED WHITE-EYE *Zosterops citrinella albiventris*

Babar Common to abundant below 650 m (PV & CRT). **Romang** Noted in 2001; in 2010, common to abundant at 0–550 m, in village, gardens, secondary and primary forest, and on Nyata. A nest with three white eggs in a clove (*Eugenia aromatica*) tree on 24 October 2010 was 2 m above ground and comprised a well-constructed cup c.12 cm wide by 15 cm deep, mostly of grass. **Sermata** Common to abundant in all habitats from beach, village to evergreen forest below 200 m. Observed feeding on grubs on the ground and on insects in papaya plants. **Leti** Observed behind the harbour on 25 September 2008. In 2010 it was common in villages, savanna woodland and secondary forest. **Kisar** Abundant in Wonreli town, gardens, savanna woodland and tropical forest throughout; c.145 recorded in 2008 (B. F. King *in litt.* 2009). **Moa** Abundant in Kaiwatu on 11 August 2001. **Damar** Heard in secondary forest on 24 September 2008. Typically one of the most abundant passerines throughout its range in the Lesser Sundas (Coates & Bishop 1997, Trainor 2007b), where it is generally replaced by Mountain White-eye *Z. montanus* above c.800–1,000 m. The latter has recently been recorded on Alor, Atauro and Wetar (Trainor *et al.* 2012; CRT unpubl.), but is absent from the south-west islands, presumably because they lack extensive high-elevation habitat. Contact notes of *Z. citrinella* comprise a variety of weak, high-pitched, twittering notes. Song on Romang is 10–17 notes over 3.3 seconds (XC139673) with a warbling quality (and variable frequency range), like *Z. c. albiventris* on Tanimbar (Coates & Bishop 1997). On Babar, continuous low-pitched (2,500–3,500 Hz) squabbling notes over 6–10 seconds were recorded (XC138342, 138347).

ZEBRA FINCH *Taeniopygia guttata guttata*

Leti Common in groups of 3–6 birds in village and savanna woodland. One adult female had a yellow bill (see IBC), which was thought to be unusual, but it is unclear if this represents the yellow-bill mutation because an orange bill is a sexually selected trait more frequent in males, and is also associated with diet, particularly carotenoids. Females often have yellow bills (J. Stapley *in litt.* 2013). It also had a faint black line behind the mandible (but less marked than in Australian birds), a white facial mark bordered by black, and the breast, belly and vent pink, contrasting strongly with the grey throat and flanks. Coates & Bishop (1997) show the adult female as having a more linear white facial patch without a black border, and the underparts are described as pale grey rather than pink. It accompanied an adult male and adult female, both of which had typical red bills. **Kisar** Common in Wonreli, and in gardens and savanna woodland across much of the island; in 2008, 49 were recorded (B. F. King *in litt.* 2009).

Long considered conspecific with Australian *T. g. castanotis*, but because of differences in plumage, size and vocalisations has been recognised specifically by some authorities (Payne 2010). Recent genetic analyses also support its distinctiveness given a high level of non-coding nuclei divergence from Australian populations (Balakrishnan & Edwards 2009). Ancestors of the Lesser Sundas subspecies hypothesised to have colonised Timor from Australia c.1.9 MYA (range 1.2–2.8 MYA: Balakrishnan & Edwards 2009) and have since colonised neighbouring Lombok east to Luang and Sermata (Coates & Bishop 1997). Common in dry, often degraded lowlands on Timor, Wetar and Atauro (Trainor and Soares 2004, Trainor *et al.* 2009), but merits greater field study; most work has been done in aviaries. The absence of Zebra Finch from Sermata, where it was collected historically, was one of several surprising omissions.

TRICOLOURED PARROTFINCH *Erythrura tricolor*

Babar Locally common to strikingly abundant in all habitats including village gardens to at least 300 m (PV & CRT). **Romang** Two records: an immature photographed at Lakuwahi, foraging in bamboo, and an immature-plumaged bird in a papaya plant at Lakuwahi. Contact calls were high-pitched (6,100–7,800 Hz) tonally complex *sweee* notes, given at least 1.4 seconds apart, with rapid increases and decreases in frequency (AV8901, 8907, XC139690), similar to birds on Timor, with slight variation in sonograms (XC32587). On Wetar, a series of higher pitched (7,800–9,100 Hz) upslurred *swik* notes was recorded. Surprisingly common on Babar, but apparently uncommon on Romang. However, ten were collected on Romang by Kühn (Hartert 1904) suggesting that it was formerly quite common. The species is frequently patchily distributed, perhaps being associated with bamboo, and is easily overlooked.

Discussion

Our study provides the first observations of Grey (Kisar) Friarbird and several subspecies endemic to the south-west islands, made during the first ornithological visits to Babar, Romang, Sermata and Leti in >100 years. The distinctiveness of Grey (Kisar) Friarbird, as well as the hen-feathered subspecies of Yellow-throated Whistler remains unclear, but based on their distinctive vocalisations both might be treated as species. The Elegant Pitta subspecies *vigorsii* has been recognised at species level (Gill & Wright 2006) and our observations confirm consistent vocal differences between subspecies (described primarily on plumage differences) and suggest that further taxonomic evaluation is needed. Other notable records were Southern Boobook, Kai Cicadabird, Green Oriole, the lowland-dwelling Snowy-browed Flycatcher and Timor Stubtail.

A total of 46 new island records of resident landbirds were made. Few are surprising. Many can be explained by greater survey effort (e.g. Southern Boobook, other endemics on Sermata), possible (e.g. Pied Bush Chat on Romang, Long-tailed Shrike on Sermata) or certain recent colonisations (e.g. Eurasian Tree Sparrow *Passer montanus*) and some large-bodied birds were not collected historically due to shipping costs (e.g. Large-billed Crow) but were mentioned by Kühn to Hartert. Records of Timor Stubtail on Romang are of substantial biogeographical significance. This tiny skulking passerine has recently been discovered on Atauro (Trainor & Soares 2004), Roti (Trainor 2005b) and Alor (Trainor *et al.* 2012). Analysis of sound-recordings shows that vocalisations are similar throughout its range. Specimens and molecular work are probably needed to improve knowledge of the taxonomic affinities of these populations. The Babar survey confirms the adequacy of historical effort because we added only six resident landbirds. The survey on Romang appears to have been adequate to record most bird species. Few resident landbirds were missed, most of them grassland specialists (Tawny Grassbird *Megalurus timoriensis*, Golden-headed Cisticola *Cisticola exilis*, Scaly-breasted Munia *Lonchura punctulata* and Pale-headed Munia *L. pallida*) or riverine birds (Azure Kingfisher *Ceyx azureus* and Common Kingfisher *Alcedo atthis*). Kai Cicadabird is one of the most poorly known Banda Sea endemics: sound-recordings from Romang should enable future surveys to determine the status of this inconspicuous (and presumably uncommon to rare) bird. A call recorded on Babar is similar to this species, but confirmation is needed. Among several migrants missed on Romang, the most interesting omission was Spotted Nightjar, which arrives from Australia in the austral winter. Specimens taken on Romang and elsewhere in the region are from the period July–September (White & Bruce 1986), so it may have been absent during our survey. Modern-day presence of Australian migrants during recent field work in the south-west islands, Tanimbar and Kai appears lower than in the collecting era (Appendix 2). Part of

the explanation may be that populations of much of Australia's avifauna are declining (e.g. Garnett *et al.* 2010) and presumably populations of migrants are in similar straits.

The large number of additions to the avifauna of Sermata (e.g. 20 resident landbirds), and the equally large number of missed species is puzzling. Additions included seven restricted-range species (Elegant Imperial Pigeon, Pink-headed Imperial Pigeon, Olive-headed Lorikeet, Cinnamon-banded Kingfisher, Orange-sided Thrush, Wallacean Whistler and Scaly-breasted Honeyeater). The best explanation is survey effort (e.g. nine days on Sermata vs. at least 47 on Babar). Kühn's men may have also focused more on open-country species and waterbirds than forest landbirds. Twenty-five (56%) of the species recorded in 1906 went unrecorded in 2010, including ten resident landbirds (Brown Goshawk, Bar-necked Cuckoo-Dove, Paddyfield Pipit *Anthus rufulus*, Wallacean Cuckooshrike, White-shouldered Triller, Wallacean Drongo *Dicrurus densus*, Black-faced Woodswallow *Artamus cinereus*, Zebra Finch, Five-coloured Munia *Lonchura quincolor* and Pale-headed Munia) that are generally common throughout their Wallacean distributions in tropical forest or savanna woodland, which were covered by the recent survey. An exception may be Brown Goshawk, an inconspicuous species that is easily overlooked, and appears rare in the south-west islands. Black-faced Woodswallow is often patchily distributed and uncommon. When CRT questioned local villagers on Sermata about the distinctive Wallacean Drongo, they mentioned that the species is abundant on an island to the west (probably Metimiarang), but they were actually referring to frigatebirds *Fregata* sp.! Possibly Kühn's men missed Sermata and visited Kelapa, 2.9 km west of Sermata. This seems unlikely, as all of the listed birds would be expected on Sermata but, as with collections from nearby Luang, there is a high proportion of visiting / migrant open-country species and few forest specialists (Hartert 1911a,c).

Sermata presumably had greater forest cover during the collecting era, so the number of open-country / grassland species recorded historically and small number of forest specialists is difficult to interpret. Of the 47 species collected on Luang, several are surprise inclusions (Bonelli's Eagle, Banded Fruit Dove and Wallacean Drongo) as these birds usually depend on forest and are mostly restricted to large islands (>c.100 km²). However, Luang presumably also had greater forest cover in the early 20th century, compared to the fragments now. One of the most surprising species that was not seen on Sermata is Paddyfield Pipit, which typically requires short grass, a habitat not found by us, but is perhaps present elsewhere on the island (or outside La Niña years). The species is abundant on drier islands such as Kisar and locally on Timor (CRT unpubl. data), and is listed for Leti and Moea, but not Babar or Tanimbar (Coates & Bishop 1997). It was not collected on Luang (Hartert 1906b, 1911c) which is now dominated by short-grass habitat. The status of finches also hints at substantial changes in bird composition between surveys. In 2010 only the newly recorded Scaly-breasted Munia was widespread and abundant, whereas in 1906 Zebra Finch, Five-coloured and Pale-headed Munias were collected. The last-named was also overlooked on Babar during recent visits. Natural avifaunal turnover has been suggested as a cause of these differences (M. Bruce *in litt.* 2011), but this seems unlikely to explain the degree and composition of avian change in a relatively short period, particularly in the absence of major environmental events (e.g. a volcanic eruption). The lack of records of Bar-necked Cuckoo-Dove (single historic specimen), Wallacean Drongo and perhaps White-shouldered Triller is also surprising, as these species are typically vocal and conspicuous. More observations are needed on Leti (and Moea) but the avifaunas of Babar, Kisar and Romang are now relatively well known, while improved coverage on Sermata (plus Luang and other islets) might add species and provide further clarification of the status of several others known only from the 1906 visit.

Acknowledgements

Thanks to Frank Rheindt and Murray Bruce for reviewing the manuscript, and their comments and suggestions which improved text. Staff of Robust Resources and PT Gemala Borneo Utama provided fantastic support including transport to and from Romang, and accommodation on Romang and Kisar. Particular thanks to Giuseppe Lo Grasso, Hery Kusama, Megah Boedi and Parlindungan Sibarani of PT Borneo for transport and accommodation on Kisar and Romang. Ben F. King made available his Kisar observations. Thanks to Bas van Balen, Martin Cachard, Mike Carter, Rohan Clarke, Jeff Davies, Stephen Debus, James Eaton, Keith Fisher, Chris Gooddie, Hein van Grouw, Jon Hornbuckle, Robert Hutchinson, Ron Johnstone, Pete Morris, Lloyd Neilson, Jessica Stapley and David Stewart for discussion, comments and clarifications mostly relating to taxonomy, or for providing comparative sound-recordings. Thanks to Paul Sweet, Matthew Shanley, Thomas Trombone (American Museum of Natural History, New York) for photographs of the White-shouldered Triller specimens collected by Kühn on Romang that confirmed its status, and to Robert Prýs-Jones and Mark Adams for access to specimens (notably of Wallacean Cuckooshrike) at the Natural History Museum, Tring.

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APPENDIX 1

Species encountered during field work on Babar, Masela, Romang, Sermata, Leti, Kisar, Damar and Moa but not included in the main text. * = new island record, predominantly migrant, visiting or non-forest resident species. All records by CRT except where indicated.

Species name	Comments
Tricoloured Grebe <i>Tachybaptus tricolor</i>	Babar*: six on lake south of Letwuring on 12 August 2011.
Great Frigatebird <i>Fregata minor</i>	Romang*: present off Hila on 13 August 2001. Leti*: two at harbour on 11 August 2001.
Lesser Frigatebird <i>Fregata ariel</i>	Babar*: one over brackish lake south of Letwuring on 12 August 2011, several seen by PV. Damar: one near Wulur on 24 September 2008.
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>	Babar*: two photographed in coastal lagoon near Tapa (PV).
Little Pied Cormorant <i>Microcarbo melanoleucos</i>	Babar*: several photographed south of Tapa at <i>air besar</i> in 2009 (PV); one at brackish lake south of Letwuring on 12 August 2011. Romang*: present off Hila on 13 August 2001. Leti*: four along coast on 13 November 2010.
Australian Pelican <i>Pelecanus conspicillatus</i>	Babar: five photographed on lagoon near Tapa in 2009 (PV). Regular on Tanimbar and Timor (Bishop & Brickle 1998, Trainor 2011).
Great-billed Heron <i>Ardea sumatrana</i>	Romang: one off Hila village and one on beach on Nyata Island. Sermata: one flew past Elo village on 2 November. Leti*: two flew past the harbour on 14 October 2010.
Great Egret <i>Ardea alba</i>	Babar: single photographed near <i>air besar</i> in 2009 (PV); one near estuary of <i>air besar</i> south of Tapa on 16 August 2011 (a male collected near Tapa on 22 May 1906: Hartert 1911b).
Intermediate Egret <i>Egretta intermedia</i>	Babar*: one on brackish lake south of Letwuring on 12 August 2011.
Pacific Reef Egret <i>Egretta sacra</i>	Babar: white phase photographed near Tapa (PV & CRT); grey phase at Tapa, white phase at Letwuring. Masela*: one on beach in 2001. Romang: white phase on Nyata Island. Sermata: dark phase seen several times in flight. Moa: two dark phase at Kaiwatu on 11 August 2001. Kisar: dark phase on beach; one in 2008 (B. F. King <i>in litt.</i> 2009).
Rufous Night Heron <i>Nycticorax caledonicus</i>	Babar: heard and seen regularly at dusk near Tapa (PV); singles flushed twice in dense coastal forest near Tapa. Sermata: one heard (<i>kwok</i>) after dusk on 8 November 2010, was presumably this species or Striated Heron <i>Butorides striata</i> .
Royal Spoonbill <i>Platalea regia</i>	Babar: one flew over Tapa on 24 August 2009 (PV); one specimen (Hartert 1906a).
Pacific Baza <i>Aviceda subcristata timorlaeensis</i>	Babar*: one photographed in shrubby clearing near Liliana (150 m) on 11 August 2011.

Species name	Comments
Oriental Honey Buzzard <i>Pernis ptilorhynchus</i>	Kisar: single photographed near the airport on 28 October 2010; one collected historically, and one seen in 2008 (B. F. King <i>in litt.</i> 2009).
Brahminy Kite <i>Haliastur indus intermedius</i>	Babar: a few observed in 2009 at Tapa (PV); three adults at Tapa and Letwurung, and an immature at Letwurung on 13 August 2011. Damar: one adult on 24 September 2008. Leti: four singles seen.
White-bellied Sea Eagle <i>Haliaeetus leucogaster</i>	Babar*: immature photographed near Tapa (PV); an adult off Tapa on 7 August 2011 and one at Liliana on 11 August 2011. Moa*: pair at the harbour in 2001. Romang*: adult in flight off Hila. Sermata: immature photographed at Elo on 8 November. Moa*: two at Kaiwatu on 11 August 2001; Kisar: one in 2008 (B. F. King <i>in litt.</i> 2009).
Japanese Sparrowhawk <i>Accipiter gularis</i>	Romang: unidentified <i>Accipiter</i> flying through Hila village on 19 October 2010 was this species or Chinese Sparrowhawk <i>A. soloensis</i> . Leti*: single perched near the harbour on 25 September 2008; an <i>Accipiter</i> observed briefly on 13 November 2010 was either this species or Chinese Sparrowhawk.
Australian Hobby <i>Falco longipennis</i>	Babar: one at close range in flight near Tapa in 2009 (PV), probably an Australian migrant or possibly resident.
Spotted Kestrel <i>Falco moluccensis microbalius</i>	Babar: several singles over open areas (PV). Sermata: one photographed and seen on several days near Elo village. Kisar: one in 2008 (B. F. King <i>in litt.</i> 2009).
Orange-footed Scrubfowl <i>Megapodius reinwardt reinwardt</i>	Babar: frequently heard throughout the night and morning in forest at Liliana; common in coastal forest and scrub near <i>air besar</i> (PV). Romang: frequently heard at dawn and after dusk in forest. Sermata: Fairly common, heard often at dusk in forest edge and gardens.
Black-winged Stilt <i>Himantopus himantopus</i>	Babar*: three photographed on exposed reef at Tapa on 17 August 2011.
Pacific Golden Plover <i>Pluvialis fulva</i>	Sermata*: one photographed behind beach 5 November 2010.
Lesser Sand Plover <i>Charadrius mongolus</i>	Babar*: flock of 30+ photographed on stony beach near Tapa on 18 August 2009 (PV).
Greater Sand Plover <i>Charadrius leschenaultii</i>	Babar: total of four on beach at Letwurung on 11–12 August 2011, and two at Tapa harbour on 17 August 2011.
Whimbrel <i>Numenius phaeopus</i>	Masela*: one on beach in 2001. Sermata*: one photographed on beach on 2 November 2010. Leti: one behind harbour on 11 November 2010. Damar: one on 24 September 2008.
Black-tailed Godwit <i>Limosa limosa</i>	Babar: one photographed near Tapa on 18 August 2009 (PV).
Common Greenshank <i>Tringa nebularia</i>	Babar: one at Tapa harbour on 17 August 2011. Damar: one on 24 September 2008.
Wood Sandpiper <i>Tringa glareola</i>	Romang*: 2–3 at Hila. Sermata*: at least two on beach.
Terek Sandpiper <i>Xenus cinereus</i>	Babar*: one photographed on beach near Tapa on 18 August 2009 (PV).
Common Sandpiper <i>Actitis hypoleucos</i>	Babar: several seen and heard near Tapa (PV); 3–4 at Tapa on 7 August 2011, two at Letwurung on 9 August 2011 and one at Tapa on 17 August 2011. Romang: c.12 at Hila and 20 on Nyata Island. Sermata*: photographed on several days at beach. Leti: one on 11 August 2001, two on 25 September 2008 and 4–5 in 2010. Kisar: several on beach; three in 2008 (B. F. King <i>in litt.</i> 2009). Damar: one on 24 September 2008.
Grey-tailed Tattler <i>Tringa brevipes</i>	Babar: one on beach at Letwurung on 12 August 2011. Romang*: four on beach at Hila. Sermata: one photographed on beach on 2 November 2010. Leti*: six in stream behind harbour on 25 September 2008, and one on beach on 13 November 2010.

Species name	Comments
Red-necked Stint <i>Calidris ruficollis</i>	Romang*: two on beach. Sermata: two photographed on beach.
Long-toed Stint <i>Calidris subminuta</i>	Babar*: two on beach near Tapa on 18 August 2009 (PV).
Curlew Sandpiper <i>Calidris ferruginea</i>	Babar*: three adults in partial summer plumage near Tapa on 18 August 2009 (PV).
Sharp-tailed Sandpiper <i>Calidris acuminata</i>	Romang*: 3–4 on beach.
Red-necked Phalarope <i>Phalaropus lobatus</i>	Leti*: three near the harbour on 11 August 2001.
Beach Thick-knee <i>Esacus magnirostris</i>	Babar: pair alarm-calling along sandy beach near <i>air besar</i> , presumably nesting nearby (PV); one calling (<i>kleep kleep</i>) at c.03.00 h at Tapa. Sermata: vocal records along the coast at night.
Australian Pratincole <i>Stiltia isabella</i>	Babar: photographed on beach (PV); four on 25 August 2009; four at Tapa on 7 August 2011 and one on 17 August 2011.
Whiskered Tern <i>Chlidonias hybrida</i>	Kisar*: single photographed near Wonreli on 12 October 2010. Damar*: single flying over mudflats on 24 September 2008.
Gull-billed Tern <i>Gelochelidon nilotica affinis</i>	Leti*: two photographed at the harbour on 25 September 2008, subsequently identified as <i>G. n. affinis</i> . Collected on Luang (Hartert 1906b).
Greater Crested Tern <i>Thalasseus bergii</i>	Romang*: at least two on 20 October 2010 photographed off Hila. Leti: c.4 observed daily along the coast.
Brown Noddy <i>Anous stolidus</i>	Romang*: flock of c.40 photographed off Hila on 20 October 2010.
Spotted Dove <i>Spilopelia chinensis tigrina</i>	Babar: uncommon with one, two or a few at Tapa and Letwurung. Romang: occasional in gardens. Sermata: frequent in small numbers in shrub and gardens. Leti: one in Elo village. Kisar: a few in gardens near Wonreli in 2010, but unrecorded in 2001 (Trainor 2003); 15 in 2008 (B. F. King <i>in litt.</i> 2009).
Pacific Emerald Dove <i>Chalcophaps longirostris timorensis</i>	Babar: frequent in well-wooded gardens and secondary forest, but unrecorded at Liliiana. Romang: common in forest; photographed; typical <i>uu-nuut</i> (XC139692, 139699–700). Sermata: one photographed and heard calling infrequently. Leti: heard in secondary forest. Kisar: several flushed in forested valleys, and heard; seven in 2008 (B. F. King <i>in litt.</i> 2009).
Barred Dove <i>Geopelia maugens</i>	Babar: uncommon at Tapa, but c.30 on road to Letwurung, where common. Romang: noted in 2001; in 2010 occasional in gardens and scrub, and on Nyata Island. Sermata: a few in gardens. Leti: one at Serwaru on 11 August 2001, and heard in the village in 2010. Kisar: fairly common in gardens and savanna woodland; c.100 in 2008 (B. F. King <i>in litt.</i> 2009).
Himalayan Cuckoo <i>Cuculus saturatus</i>	Sermata*: one flushed in coastal shrub and photographed on 8 November 2010.
Koel sp. <i>Eudynamis orientalis / scolopaceus</i>	Romang: regularly heard after dusk and occasionally by day. Sermata*: a few heard at dawn and dusk around forest. Historically only Pacific Koel <i>E. orientalis</i> collected in region.
White-throated Needletail <i>Hirundapus caudacutus</i>	Sermata*: flocks of 20–30 photographed on coast. An uncommonly reported Palearctic winter visitor to the region with few Lesser Sunda records; winters mostly in New Guinea and eastern Australia (Coates & Bishop 1997).
Pacific Swift <i>Apus pacificus</i>	Leti*: a few over village on 11 November 2010. Kisar*: c.6 over Wonreli on 16 November 2010.

Species name	Comments
Collared Kingfisher <i>Todiramplius chloris chloris</i>	Babar: heard at harbour in 2001; common in 2009 (PV); abundant on coast (10–30 daily) and frequent inland along rivers in 2011. Romang: present in 2001; in 2010 frequent in all wooded habitats, one flew from a termitaria on a coconut palm. Sermata: common in woodland and tropical forest. Leti: one seen and several heard in 2010. Kisar: four in 2008 (B. F. King <i>in litt.</i> 2009). Damar: one on 24 September 2008.
Sacred Kingfisher <i>Todiramplius sanctus</i>	Babar: abundant along coast with up to 20 daily, perched on wires, exposed coral reefs and coastal trees.
Small kingfisher sp.	Damar*: a high-pitched squeak, similar to Common Kingfisher <i>Alcedo atthis</i> heard on 24 September 2008 (Common Kingfisher occurs on Romang, though unrecorded in 2010).
Rainbow Bee-eater <i>Merops oruatus</i>	Romang: occasional over village and gardens; also Nyata Island. Kisar: heard and 3–4 seen; two in 2008 (B. F. King <i>in litt.</i> 2009).
Oriental Dollarbird <i>Eurystomus orientalis pacificus</i>	Babar: heard at Liliana on 14 August 2011. Romang*: frequent at garden edge and in secondary forest (XC139853). Leti: two photographed in savanna woodland. Kisar: one in 2008 (B. F. King <i>in litt.</i> 2009).
Horsfield's Bushlark <i>Mirafra javanica</i>	Kisar*: song flights recorded at airfield on 12 October 2010.
Barn Swallow <i>Hirundo rustica gutturalis</i>	Babar*: two at Tapa on 14 August 2011. Romang*: a few at Hila. Sermata*: twos and threes in flight at village. Leti: one on 25 September 2008, and a few over village in 2010. Kisar*: a few seen.
Pacific Swallow <i>Hirundo tahitica javanica</i>	Babar: a few photographed near Tapa (PV & CRT), seen at Letwurung. Romang: noted at Hila in 2001, and a few there in 2010. Leti*: c.20 over beach on 25 September 2008, and small numbers in 2010. Kisar: two seen; 12 in 2008 (B. F. King <i>in litt.</i> 2009).
Tree Martin <i>Petrochelidon nigricans</i>	Babar: a few in 2009 (PV) and c.5 near Tapa on 7 & 14 August 2011. Leti*: c.20 in small groups on powerlines on 11–14 November 2010.
Eastern Yellow Wagtail <i>Motacilla tschutschensis</i>	Romang*: up to four at Hila; one on Nyata Island. Sermata*: ones and twos regular around village and in coastal shrub, including an immature photographed. Kisar*: singles along stream on 12 October 2010. Damar*: heard on 24 September 2008.
Paddyfield Pipit <i>Anthus rufulus</i>	Leti: 3–4 heard in coastal savanna. Kisar: common in grassy savanna woodland; 15 in 2008 (B. F. King <i>in litt.</i> 2009).
Zitting Cisticola <i>Cisticola juuclidis</i>	Leti: common in village, gardens and savanna. Kisar: frequently heard, one photographed; two in 2008 (B. F. King <i>in litt.</i> 2009).
Island Monarch <i>Monarcha cinerascens</i>	Romang: frequent in primary and secondary forest to 320 m; also Nyata Island. Sermata*: common in primary and secondary forest to 200 m with one photographed. Kisar: frequent in forested valleys.
Spectacled Monarch <i>Synposiachus trivirgatus trivirgatus</i>	Romang: seen in 2001 on coast; in 2010 frequent in primary and secondary forest to 320 m.
Black-faced Woodswallow <i>Artamus cinereus</i>	Leti: four flying over village on 13 November 2010.
White-breasted Woodswallow <i>Artamus leucorhynchus musschenbroeki</i>	Babar: small numbers along river inland of Tapa (PV); just two south of Tapa in 2011. <i>A. l. musschenbroeki</i> is endemic to Babar and Tanimbar, but is weakly differentiated, with a slightly longer and stouter bill, and marginally more black on the crown (White & Bruce 1986).
Short-tailed Starling <i>Aplousis miuor</i>	Romang: uncommon with c.1 record / day in primary and secondary forest, mostly of pairs flying over.
[Indonesian Honeyeater <i>Lichmera limbata</i>]	Kisar*: heard near the airport, but none seen, so this first record must be considered unconfirmed. Perhaps occasionally visits from Timor or Wetar.

Species name	Comments
Eurasian Tree Sparrow <i>Passer montanus</i>	Babar*: introduced and locally common in Tapa (PV & CRT) and Letwurung. Romang*: common in Hila. Sermata*: abundant in Elo. Leti: common in Serwaru. Kisar*: abundant in Wonreli and over much of the island near houses; present in 2008 (B. F. King <i>in litt.</i> 2009).
Scaly-breasted Munia <i>Lonchura punctulata blasii</i>	Babar: uncommon except in Tapa gardens where c.20 seen. Romang: munias observed in 2001 and 2010 but not identified to species may have been this species, which was collected historically. Sermata*: not collected historically, common in flocks of up to 30 at Elo village, with photographs of adults and immatures. Kisar: common in savanna woodland and village, mostly juveniles.
Five-coloured Munia <i>Lonchura quinticolor</i>	Babar: groups of up to ten in gardens at Tapa, but not seen elsewhere.

APPENDIX 2

Status of Australian landbird migrants in the Banda Sea region (sources: White & Bruce 1986, Bishop & Brickle 1998, Hornbuckle 2009, Johnstone & van Balen 2013; PV & CRT unpubl.). Key: H = historical record (pre-1980), R = recent record (post-1980). It is unclear whether some species arrive as migrants or are represented by resident forms, or a mix of both (including omitted species such as Australian Hobby *Falco longipennis* and koels *Eudynamys* sp.).

Species	South-west	Tanimbar	Kai
Nankeen Kestrel <i>Falco cenchroides</i>	H		R
Pallid Cuckoo <i>Cacomantis pallidus</i>	H		
Brush Cuckoo <i>C. variolosus</i>	H		H/?R
Horsfield's Bronze Cuckoo <i>Chrysococcyx basalis</i>		R	
Shining Bronze Cuckoo <i>C. lucidus</i>	?	?	?
Black-eared Cuckoo <i>C. osculans</i>	H		H
Channel-billed Cuckoo <i>Scythrops novaehollandiae</i>	H	H/R	H/R (probably resident)
Spotted Nightjar <i>Eurostopodus argus</i>	H		
Sacred Kingfisher <i>Todiramphus sanctus</i>	H/R	H/R	H/R
Forest Kingfisher <i>T. macleayii</i>	H	H/R	H/?R
Rainbow Bee-eater <i>Merops ornatus</i>	H/R	H/R	R
Oriental Dollarbird <i>Eurystomus orientalis</i>	H/R	H/R	H/R
Tree Martin <i>Petrochelidon nigricans</i>	H/R	R	H/R
Black-faced Cuckooshrike <i>Coracina novaehollandiae</i>	H	H/R	H/R
White-bellied Cuckooshrike <i>C. papuensis</i>	H	H/R	H/R
Olive-backed Oriole <i>Oriolus sagittatus</i>	H		
Magpielark <i>Grallina cyanoleuca</i>	H	R	H